Federal Highway Administration
Region Four

Administrative Action

Finding of No Significant Impact

United States Department of Transportation

Federal Highway Administration

and

Florida Department of Transportation

Interstate 4 (State Road 400) from west of Memorial Boulevard
to the Polk/Osceola County line in Polk County, Florida.

Financial Project Number: 201210 1 21 01
State Project Number: 16320-1402 (Old)
Work Program Item Number: 1147948 (Old)
Federal Project Number: 0041 130 I

The proposed action consists of roadway improvements to 47.4 km (29.5 mi) of Interstate 4 (I-4) in Polk County, Florida, widening it from the existing four-lane divided highway to six general purpose lanes, four special use lanes, and sufficient right-of-way for the future inclusion of rail service in the median.

Submitted pursuant to 42 U.S.C. 4332 (2)(c)

12-16-98
Date

Patrick H. Bauer
for Division Administrator
Federal Highway Administration

The Federal Highway Administration (FHWA) has determined that this project will not have any significant impact on the human environment. This Finding of No Significant Impact is based on the attached Environmental Assessment which has been independently evaluated by FHWA and determined to adequately and accurately discuss the environmental issues and impacts of the proposed project. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope, and contents of the attached Environmental Assessment.

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The attached Environmental Assessment (EA) addresses a section of Interstate 4 (I-4) in Polk County from west of Memorial Boulevard to the Polk/Osceola County line, a distance of approximately 47.4 km (29.5 mi) (see Figure 1-1 in the EA). I-4 is an east-west limited access freeway connecting the urban centers of Tampa, Lakeland, Orlando, and Daytona Beach across central Florida. It is the only major east-west expressway through Polk County and central Florida. Within Polk County, the existing facility is a four-lane divided highway constructed within the standard interstate right-of-way width of 91.4 m (300 ft). Maximum right-of-way and easements are provided at grade separations, interchanges, rest areas, and some drainage canals.

Designed and constructed to pre-1960s highway criteria, I-4 has substantial roadway deficiencies related to typical section, horizontal and vertical alignments, clearances, pavement structural conditions, and bridge structural conditions as compared to current design standards. These conditions create potential safety hazards to local and through commercial and non-commercial traffic. I-4 is the principal east-west weather emergency evacuation route through central Florida.

As the central Florida region continues to grow as a retirement area and tourist destination, traffic on I-4 through Polk County is also expected to increase substantially. Without the proposed project, the population and visitor growth in Polk County, Lakeland, and central Florida region will increase the traffic demand on I-4 and reduce the level of service (LOS) on the roadway. The deteriorating LOS on the roadway may in turn retard economic development in Polk County and could adversely affect tourism in the region. The proposed I-4 improvements would upgrade existing driving conditions and accommodate anticipated increases in traffic demand within the corridor. Although rail transit service is not part of this study, the proposed ultimate typical section of this project allows a median sufficiently wide to accommodate future rail operations in the region.

The proposed action includes widening the existing four-lane divided highway to six general purpose lanes, four special use lanes for high occupancy vehicles (HOV)/single occupant through vehicles (SOV), and sufficient right-of-way for future inclusion of rail service in the median. Eight existing interchanges would be improved and one proposed interchange with the Polk County Parkway (studied by others and not included in this document) would be added. Structures at eleven non-interchange locations (including the CSX Railroad overpass) would be replaced to accommodate the proposed I-4 typical section. Future I-4 mainline right-of-way is proposed up to a maximum of 128.8 m (422.6 ft).

The core of the recommended typical sections for this project consists of three 3.6 m (12 ft) general purpose travel lanes each way, two 3.6 m (12 ft) special use travel lanes each way and a minimum 20.0 m (66 ft) median to provide for the future inclusion of rail service. The special use lanes would be separated from the general purpose lanes by two shoulders and a barrier wall totaling 7.8 m (26 ft). The differences in the two recommended typical sections are the classification (rural or urban) and the border dimensions to the right-of-way.

1. An urban interstate typical section to be constructed within the existing 91.4 m (300 ft) right-of-way is recommended from west of Memorial Boulevard to east of the SR 33 interchange (Segments 2, 8 and 3).

2. A rural interstate typical section contained within a minimum 128.8 m (422.6 ft) right-of-way is recommended from east of the SR 33 interchange to the Polk/Osceola County line (Segments 4, 5, 6, 9 and 7) (see Section 1.0 in the EA).

The proposed improvements to I-4 will require the acquisition of additional right-of-way resulting in the displacement of approximately 20 residences and 3 businesses. No churches, schools, social service agencies, medical facilities, community centers, non-profit organizations, police or fire facilities will be directly impacted by the project. In accordance with Florida Statutes and the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, a Conceptual Stage Relocation Plan was developed for this project. Comparable replacement housing for sale and for rent is available along the I-4 corridor. However, some last resort rent supplements and last resort replacement housing payments may be necessary. There are numerous single-family dwellings for sale and for rent as well as residential lots available for new construction.

In accordance with Executive Order 12898, Environmental Justice, dated February 11, 1994, the proposed project was evaluated for disproportionately high adverse human health and environmental effects on minority and low-income populations. A small number of the estimated 20 residential and 3 business relocations may be minority, ethnic, elderly, or low-income persons. The project is compatible with projected land use and growth management plans and is consistent with future transportation plans in Polk County. The project has been developed in accordance with Title VI of the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968.

FHWA, in compliance with Section 106 of the National Historical Preservation Act and in consultation with the State Historic Preservation Officer (SHPO), has determined the proposed action will have no effect upon any properties protected under Section 106. A letter of no effect dated August 2, 1995 from the SHPO is included in Appendix D of the attached EA.

The proposed project will not use any properties as defined by Section 4(f) of the Department of Transportation Act. FHWA has determined that Section 4(f) does not apply.

An air quality study was conducted to determine whether the proposed project would result in or contribute to an exceedance of the National Ambient Air Quality Standard (NAAQS) for carbon monoxide. The results of the air quality analysis indicate that the proposed project will not cause or contribute to an exceedance of the NAAQS for carbon monoxide with or without the improvements. The project is in an area designated as attainment for ozone standards under the criteria contained in the Clean Air Act. The proposed project is in conformance with the State Implementation Plan because it will not cause violations of the NAAQS.

A noise study was conducted for the proposed project and a Noise Study Report, Revised August 1998, was prepared. A total of 933 existing and planned noise sensitive sites were identified and evaluated Of those, 380 are predicted to experience noise levels which approach or exceed the FHWA Noise Abatement Criteria. Abatement measures were considered for all of the sites predicted to be impacted by noise with the proposed improvements. The abatement measures considered were traffic management, roadway alignment, and the construction of noise barriers.

Due to the nature of the facility and the capacity constraints caused by such measures, traffic management is not considered to be a feasible or reasonable mitigation measure for the project. Shifts in the roadway alignment would cause impacts unrelated to noise to resources along the I-4 corridor. While considered to be feasible, realignment of the roadway is considered to be unreasonable for the mitigation of potential noise impacts.

Noise barriers were evaluated at 27 locations along the project corridor. As a result of the evaluation, noise barriers cannot provide the desired reduction in decibels at three of the sites and the cost effective guideline for cost per benefited receiver is exceeded at 17 other locations. As such, noise barriers are not considered to be reasonable noise abatement measures at 20 of the 27 locations evaluated. At the remaining seven sites (Barriers 2, 6, 7, 11, 15, 16 and 17), it was determined that a noise barrier would be further evaluated at these locations during the subsequent design phase of the project. Based upon the noise analysis conducted to date, there appears to be no feasible solution available to mitigate for noise impacts at the 20 other locations. It is recommended that future noise impacts be mitigated throughout the area through the adoption of local ordinances involving zoning, set backs, and construction methods.

Pursuant to Executive Order 11988, "Floodplain Management", the proposed action was determined to encroach on or borders the base floodplain at 38 locations. The proposed I-4 project improvements would encroach at 30 of the 38 floodplain locations. The estimated total volume of floodplain displacement for the entire project is 101,625 m^3 (82.39 ac-ft). Compensation for this loss of floodplain storage will be coordinated with the Southwest Florida Water Management District (SWFWMD) and the St. Johns River Water Management District (SJRWMD) during subsequent design phases of this project.

One designated floodway is crossed by the project at Itchepackesassa Creek Tributary 1. The proposed I-4 improvements will modify the existing culvert at that location with one of equal or greater hydraulic capacity resulting in no increase of the water surface elevations. The proposed improvements to I-4 are consistent with the existing watershed and floodplain management programs for the Lakeland Planning Area and Polk County. For additional information regarding floodplain management, see Section 4.3.11 and the Comments and Coordination section in Section 5.0 of the EA.

In accordance with Executive Order 11990 "Protection of Wetlands", wetland impacts associated with the proposed improvements were evaluated. Extensive assessments of wetlands and environmental resources within the project corridor were conducted. More than 100 wetland sites were identified, classified, and characterized. Three general types of palustrine wetlands dominate the corridor: forested systems, scrub/shrub communities, and emergent marshes. Other wetland types include lakes, man-made open water features, and drainage ditches. Wetland Evaluation Technique, Version 2.1 (WET 2.1) was used to assess the functional values of the wetlands proposed for impact by the project.

The proposed project will impact approximately 85.32 ha (210.88 ac) of wetlands. Approximately 60 percent of the total estimated area of wetland impacts is located within the existing roadway right-of-way. Most of the remaining area is located immediately adjacent to the existing roadway right-of-way. Many of these impacts are to man-made wetlands such as borrow pits created during the construction of the existing roadway, created lakes, conveyance canals, and ditches. The extent of habitat and wetland plant communities affected by the project is minimal and in-kind replacement can be accomplished through the creation of additional borrow areas, roadside conveyance ditches, or the addition of littoral shelves to existing wetland areas.

All wetland impacts will be mitigated through the use of one or more of several compensation options including: in-kind replacement; wetland enhancement; or mitigation banking in coordination with all regulatory agencies. In accordance with FHWA policy as contained in 23 CFR 777.11, the full range of mitigation options were considered in developing the project, including avoidance, minimization, restoration, enhancement and creation. Mitigation options include restoration, enhancement, creation and the use of S. 373.4137 F.S. (The Bronson Bill), which allows payment of $75,000 per acre to the Water Management Districts for their use in mitigating the impacts. Final determination of jurisdictional areas, proposed wetland impacts, and mitigation requirements will occur through coordination among FDOT and natural resource regulatory agencies during the final design and permitting phase of the project.

Based on the above considerations, it has been determined that there is no practical alternative to the proposed new construction in wetlands, and that the proposed action includes all practicable measures to minimize harm to wetlands.

There are no designated Aquatic Preserves located within the project area.

No significant degradation of water quality is anticipated. The proposed storm water facility design will include, at a minimum, the water quantity requirements for water quality impacts as required by the SWFWMD in Chapters 40D-4 and 40D-40 F.A.C. and the SJRWMD in Chapters 40C-4, 40C-40, and 40C-42 F.A.C. Therefore, no further mitigation for water quality impacts will be needed. Potential short-term surface water quality impacts anticipated from the proposed improvements are limited to the occurrence of soil erosion during project construction. Impacts will be minimized through the use of Best Management Practices for erosion control and adherence to federal, state, and local water quality standards.

There are no designated Outstanding Florida Waters located within the project area.

There are no designated Wild and Scenic Rivers located within the project area.

The proposed project has been evaluated for potential impacts to wildlife and habitat resources, including protected species in accordance with the Endangered Species Act of 1973, as amended. An Endangered Species Biological Assessment report was prepared. No critical habitat for any protected species, with the exception of known nest locations, was identified within the project corridor.

Impacts to Florida scrub jay territories will occur as a result of the proposed project. Consultation with the U.S. Fish and Wildlife Service (USFWS) has been initiated and mitigation will be accomplished at a ratio of 2:1 through utilization of the FDOT Highlands County mitigation bank. The project is located outside the designated protection zones for four bald eagle nests located in the vicinity of the corridor. The USFWS concluded in a letter dated 8-27-97 that, "The proposed project is located outside of the protection zones for bald eagle nests PO49, PO49A, PO50A, and PO64A. Therefore, we conclude that the proposed project is not likely to adversely affect the aforementioned bald eagle nests". All gopher tortoise habitat was surveyed according to Florida Game and Fresh Water Fish Commission (FGFWFC) methodology guidelines. No active, inactive, or abandoned burrows were identified within the project limits. Incidental take permits will be required for any impacts potentially occurring to individuals found along the linear impact zone of construction. Mitigation, if required, will be accomplished through the use of the FDOT Highlands County mitigation bank.

Two recommended wildlife undercrossings are proposed in the vicinity of the Green Swamp to preserve important habitat connections. Linking the swamp on the north and south sides of I-4 will allow the exchange and importation of different genetic stocks to ensure that healthy wildlife populations are maintained. A third undercrossing is proposed in the vicinity of Saddle Creek and the Tenoroc Management Area to link the Peace River drainage basin on either side of I-4. Design criteria to enable the areas to be used as wildlife undercrossings has been coordinated with the FGFWFC, the USFWS, Florida Department of Environmental Protection (FDEP), SWFWMD, and SJRWMD. Correspondence with the FGFWFC regarding the undercrossings is contained in Appendix G of the attached Environmental Assessment.

In compliance with the Farmland Protection Policy Act of 1984, farmlands along the proposed I-4 alignment were evaluated for potential impacts. See Appendix H in the attached EA for the Farmland Conversion Impact Rating Form and coordination letters with the Natural Resource Conservation Service (NRCS) (formerly the Soil Conservation Service). The State Soil Scientist has reviewed the project corridor and determined that under the NRCS's definition, no prime and unique farmlands will be converted by the project to transportation use. Through coordination with the Soil Conservation Service, it has been determined that no farmlands as defined by 7 CFR 658 are located in the project vicinity.

The Office of Planning and Budget, Office of the Governor has determined that this project is consistent with the Florida Coastal Zone Management Plan. The letter from the State of Florida Department of Community Affairs, dated May 22, 1995 can be found in the project file.

The existing and proposed right-of-way was evaluated to determine the potential for contamination from adjacent properties and business operations and a Level 1 Contamination Screening Evaluation Report was prepared. A total of 54 potentially contaminated properties were identified along the project corridor (eight of which are part of the separate US 98 PD&E study and have been documented separately). Of the remaining 47 sites, soil borings and organic vapor analyzer screenings were conducted at sites initially rated MEDIUM and HIGH. No evidence of soil or groundwater contamination was detected at any of the sites. As a result of the tests and based on historical information developed, four sites are ranked MEDIUM and all the others have been revised to LOW. Prior to construction, additional site assessments will be performed as necessary to determine the levels of contamination, if any, and evaluate remediation options and the associated costs.

A Public Involvement Program was developed and carried out as an integral part of this project (see Section 5.0 of the EA). The purpose of the program is to establish and maintain meaningful communication with the public at-large and individuals and agencies concerned with the project and its potential impacts. The FDOT initiated early project coordination on February 1, 1995 through the distribution of an Advance Notification Package.

A series of periodic information newsletters were provided to the public through direct mailings. Public Workshops were held on January 26, 1995 at Calvary Baptist Church on US 98 in Lakeland and again on January 31, 1995 at the Comfort Inn located at I-4 and US 27 to inform the communities of the proposed improvements to I-4 and solicit comments. The meetings were informal in nature. Notification was made via direct mail to elected and appointed officials in Polk County, the City of Lakeland, and to property owners whose property lies in whole or in part within 91.4 m (300 ft) from the centerline of the proposed project.

Public Hearings were held on October 12, 1998 at the Southgate Inn located at I-4 and US 27 and again on October 13, 1998 at the Calvary Baptist Church on US 98 in Lakeland. Notification was again by direct mail. Formal presentations were made to inform the public of the recommended alternative and invite oral and/or written comments for the official public record. In general, public support for the project was expressed. A few individuals expressed concern about potential noise effects in their neighborhoods. The FDOT agreed to investigate their concerns and respond to the individuals with their findings.

The Environmental Assessment was approved for public availability on September 3, 1998 and addresses all of the viable alternatives that were studied during project development. The environmental effects of all alternatives under consideration were evaluated during the preparation of this document. Even though this document was made available to the public before the public hearings, the Finding of No Significant Impact was made after consideration of all comments received as a result of public availability and the public hearings.

In light of these considerations, and in consultation with the FDOT, the FHWA has found that the project constitutes a federal action which will not significantly affect the quality of the human or natural environment. This finding has been substantiated by in-depth analyses of the anticipated social, economic and environmental impacts of the proposed action. The following individuals may be contacted for further information.

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ENVIRONMENTAL ASSESSMENT

Federal Highway Administration
Region Four

DRAFT

ADMINISTRATIVE ACTION
ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Highway Administration
and
Florida Department of Transportation
District One, Bartow, Florida

In cooperation with the
U.S. Army Corps of Engineers

Financial Project Number: 201210
Federal Project Number: 0041 130

Formerly:
State Project Number: 16320-1402
Work Program Item Number: 1147948
Federal-Aid Project Number: ACDH-4-1(130)25

INTERSTATE 4
(State Road 400)
Polk County, Florida

from West of Memorial Boulevard
to the Polk/Osceola County Line

The proposed action consists of roadway improvements to 47.4 km (29.5 mi) of I-4 in Polk County, Florida, widening it from the existing four-lane divided highway to six general purpose lanes, four special use lanes, and sufficient right-of-way for future inclusion of rail service in the median.

Submitted pursuant to 42 U.S.C. 4332(2)(c)

August 1998

Approved for Public Availability

9-3-98
Date

Patrick A. Bauer
for Division Administrator
Federal Highway Administration

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1.0 DESCRIPTION OF THE PROPOSED ACTION

Interstate 4 (I-4) is an east-west limited access freeway connecting the urban centers of Tampa, Orlando and Daytona Beach across central Florida. It is the only existing major east-west expressway through Polk County and Central Florida. In Polk County, the existing facility is a four-lane divided highway constructed within the standard interstate right-of-way width of 91.4 m (300 ft). Maximum right-of-way width in the four bifurcated median areas is 162.8 m (534 ft). Additional right-of-way and easements are provided at grade separations, interchanges, rest areas, and some drainage channels.

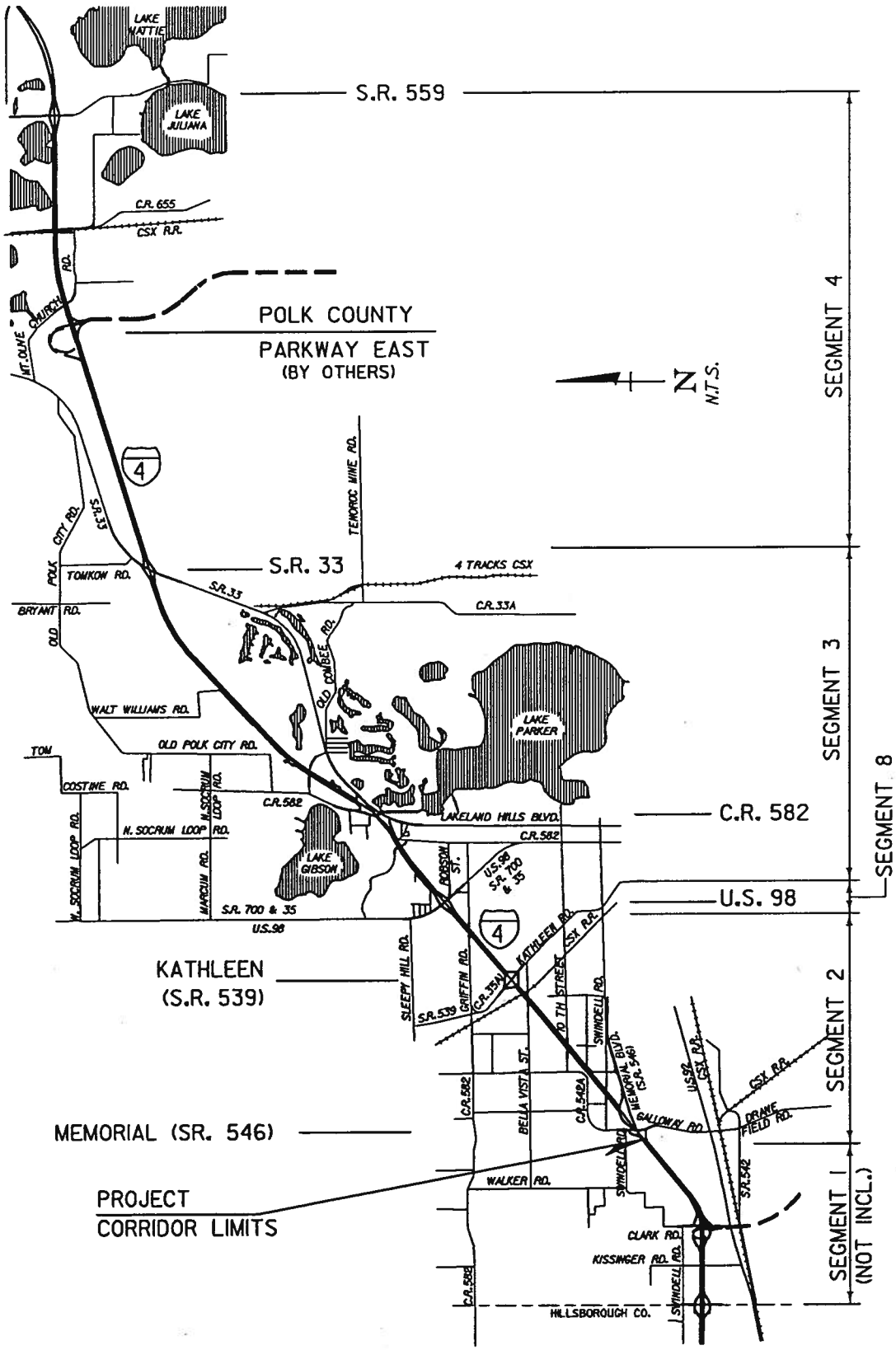
The Florida Department of Transportation (FDOT) is proposing improvements to I-4 in Polk County from west of Memorial Boulevard to the Polk/Osceola County line, a distance of about 47.4 km (29.5 mi), to accommodate present and future traffic demands. The project location is shown in Figure 1-1 (a-b), pages 1-2 and 1-3. These improvements include widening the existing four-lane divided highway to six general purpose lanes, four special use lanes for high occupancy vehicles (HOV)/single occupant through vehicles (SOV), and sufficient right-of-way for future inclusion of rail service in the median. Eight existing interchanges would be improved and one proposed interchange with the Polk County Parkway (studied by others and not discussed in this document) would be added. Structures at eleven non-interchange locations (including the CSX Railroad overpass) would be replaced to accommodate the proposed I-4 typical section. Future I-4 mainline right-of-way is proposed up to a maximum of 1288 m (422.6 ft). The recommended typical sections are shown in Figures 1-2 and 1-3 on pages 1-4 and 1-5.

The I-4 Project Development and Environment (PD&E) study is comprised of eight segments (numbered 2 through 9). The project segment limits and numbers have been arranged to correspond to the anticipated future design contracts for I-4 (see Figure 1-1 (a-b), pages 1-2 and 1-3, and Table 1-1).

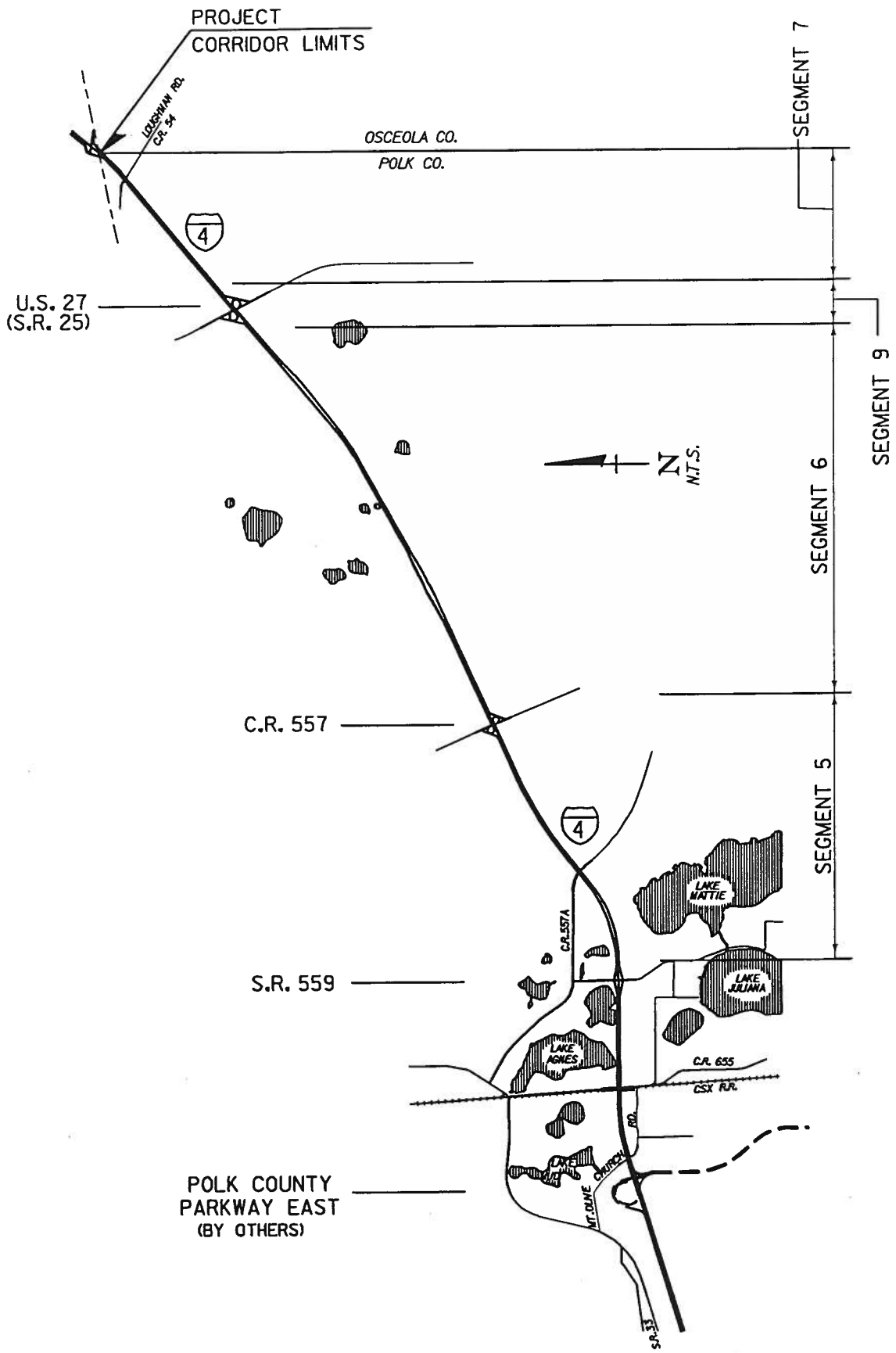
This Environmental Assessment excludes Segment 1 of I-4 in Polk County from the Hillsborough/Polk County line to west of Memorial Boulevard, a distance of 4.1 km (2.5 mi). A Design Reevaluation for I-4 Segment 1 was conducted in January 1994 as a part of a Design Reevaluation for the Polk County Parkway in order to evaluate the impacts of the proposed Polk County Parkway West interchange on I-4 in the vicinity of Clark Road.

The Interstate 4 Multimodal Interstate Master Plan for Polk County, November 1994 (1994 I-4 Master Plan) has been completed and concurred with by the Federal Highway Administration (FHWA) (see letter dated February 9, 1995 in Appendix A). The 1994 I-4 Master Plan analyzed the existing I-4 corridor in Polk County from west of the Hillsborough/Polk County line to the Polk/Osceola County line, a distance of 52.3 km (32.5 mi), which includes the project area under study.

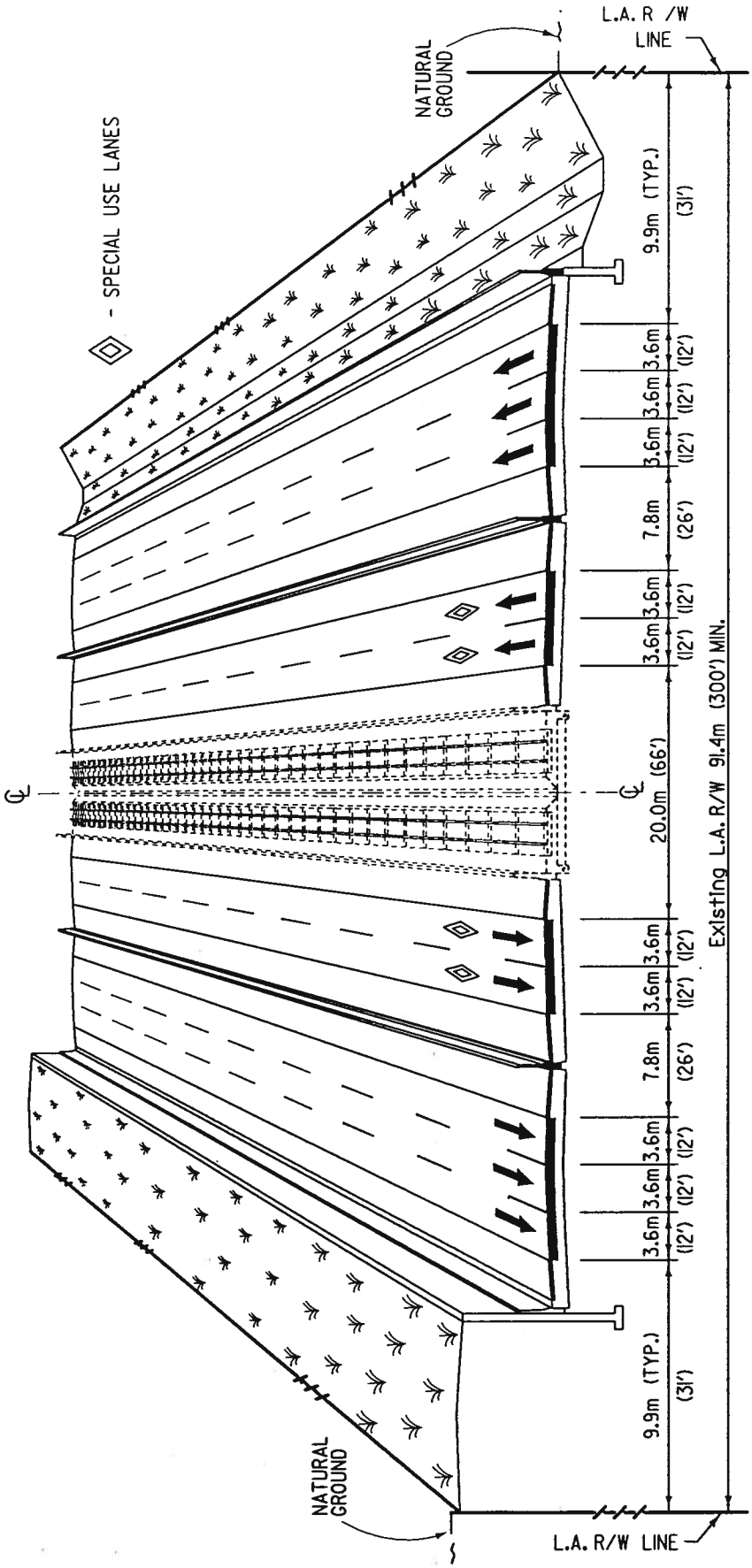
An Environmental Class of Action Determination Form 508-01 was submitted to the FHWA on November 11, 1995 requesting concurrence that an Environmental Assessment is the appropriate form of environmental documentation for this project. Concurrence was granted on April 22, 1996. The U.S. Army Corps of Engineers requested to be included as a cooperating agency on this project. A copy of the signed Form 508-01 cover page is included in Appendix A.



PROJECT CORRIDOR LOCATION MAP	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 1-1a

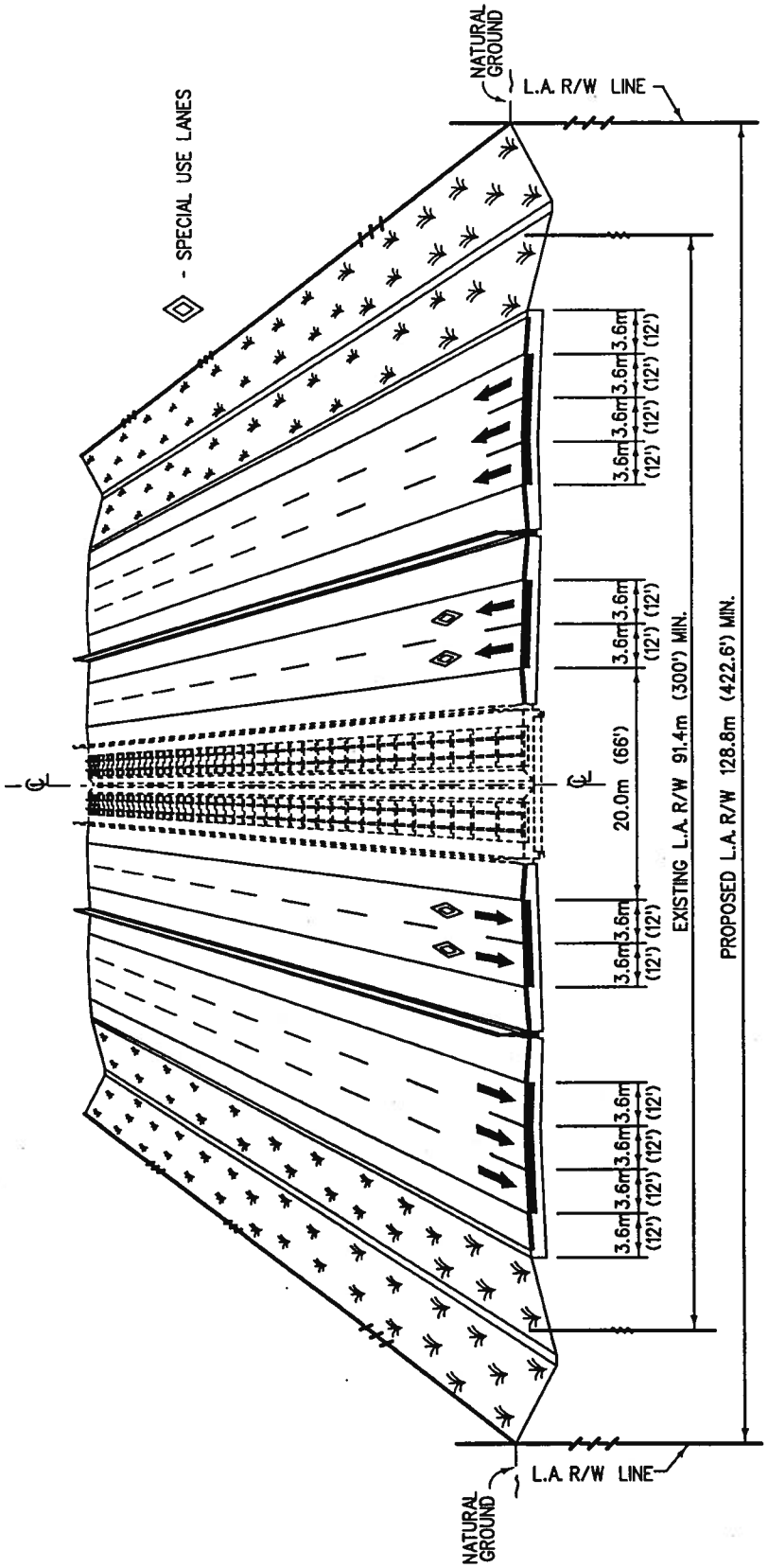


PROJECT CORRIDOR LOCATION MAP	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 1-1b



RECOMMENDED I-4
URBAN INTERSTATE TYPICAL SECTION
(WEST OF MEMORIAL BLVD. TO EAST OF S.R. 33)
6 GENERAL PURPOSE LANES
4 SPECIAL USE LANES
RAIL ENVELOPE

RECOMMENDED I-4 MAINLINE 91.4m (300 ft.) URBAN TYPICAL SECTION	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 1-2



RECOMMENDED I-4
RURAL INTERSTATE TYPICAL SECTION
(S.R. 33 TO THE POLK/OSCEOLA COUNTY LINE)
6 GENERAL PURPOSE LANES
4 SPECIAL USE LANES
RAIL ENVELOPE

RECOMMENDED I-4 MAINLINE 128.8m (422.6 ft.) RURAL TYPICAL SECTION	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 1-3

Table 1-1
PROJECT SEGMENTS
I-4 Project Development and Environment Study

Segment Number	Length	Description
2	5.8 km (3.6 mi)	West of Memorial Boulevard (MP 2.565) to West of US 98 (MP 6.150)
3	9.5 km (5.9 mi)	East of US 98 (MP 6.680) to East of SR 33 (MP 12.608)
4	9.8 km (6.1 mi)	East of SR 33 (MP 12.608) to East of SR 559 (MP 18.669)
5	6.4 km (4.0 mi)	East of SR 559 (MP 18.669) to East of CR 557 (MP 22.647)
6	10.0 km (6.2 mi)	East of CR 557 (MP 22.647) to West of US 27 (MP 28.838)
7	3.9 km (2.4 mi)	East of US 27 (MP 29.501) to Polk/Osceola County line (MP 32.022)
8	0.8 km (0.5 mi)	US 98 Interchange, from West of US 98 (MP 6.150) to East of US 98 (MP 6.680)
9	1.1 km (0.7 mi)	US 27 Interchange, from West of US 27 (MP 28.838) to East of US 27 (MP 29.501)

* Segment 1 is not included in this PD & E Study.

2.0 NEED

Implementation of the proposed improvements to I-4 is needed because:

- I-4 is the only major east-west expressway in central Florida, connecting Tampa on the west coast, Orlando, and Daytona Beach on the east coast. As the central Florida region continues to grow as a retirement area and visitors to the region's tourist attractions increase, traffic on I-4 through Polk County is also expected to increase.

- Polk County and the City of Lakeland, situated between the major metropolitan areas of Tampa and Orlando, have experienced rapid population and economic expansion since 1970. The growth is expected to continue, resulting in higher traffic volumes on I-4.

- Designed and constructed to pre-1960s highway criteria, the interstate has substantial roadway deficiencies related to typical section, horizontal and vertical alignments, clearances, pavement structural conditions and bridge structural conditions as compared to current design standards. These conditions create potential safety hazards to local and through commercial and non-commercial traffic.

- I-4 is the principal east-west weather emergency evacuation route through central Florida. As growth continues in west-central Florida (Polk, Hillsborough and Pinellas Counties), higher evacuation traffic volumes will result.

Without the proposed project, the expected population growth in Polk County and Lakeland, and in the central Florida region will increase the traffic demand on I-4 and thus reduce the level of service (LOS) on the roadway. The worsening LOS on the roadway may retard economic development in Polk County and could adversely affect the tourist trade in the region. The proposed I-4 improvements would upgrade current driving conditions and accommodate anticipated increases in traffic demand in this corridor. A high quality and safe roadway network is important for Polk County's expanding infrastructure. Although rail transit service is not a part of this study, the proposed ultimate typical section of this project allows a median sufficiently wide to accommodate future rail operations in the region.

I-4 has been designated as an interregional evacuation route in the "Central Florida Regional Hurricane Evacuation Study Update", Central Florida Regional Planning Council, 1995. The highly populated counties of Hillsborough and Pinellas (to the west) use I-4 in Polk County as one of the primary evacuation routes during a weather emergency. In the event of a short notice Category 4 or 5 hurricane threatening the Tampa Bay area, a 1989 survey estimated evacuees would be using up to 190,000 vehicles. The FDOT currently classifies I-4 as having a LOS C which accommodates 47,100 vehicles per day. If a substantial percentage of these evacuees intend to use the I-4 corridor as their route of egress, traffic flow will be severely congested.

Without any improvements to I-4, opening the existing two eastbound lanes to four lanes by using the shoulders would not be an option due to the substandard shoulder widths and narrow bridges. Therefore, the capacity for an evacuation using only two lanes would be severely inadequate. The ultimate typical section, however, would include three general purpose lanes and two special use lanes with shoulder widths capable of being utilized in an evacuation situation. A total of nine lanes in the eastbound

direction would facilitate a more controlled and efficient evacuation compared to only two lanes without any improvements to I-4.

During the 1980s, the City of Lakeland grew by 23,170 people. Among cities with over 70,000 in population, Lakeland was the fourth fastest growing city in Florida. The 1980 to 1990 census figures show a 34 percent increase in population for the region of which 17 percent are age 65 or older. Development of Polk County north of Lakeland has increased dramatically since US 98 was improved to a four-lane facility in the 1970s.

The City of Lakeland and its surrounding area is and will continue to be a prime residential area and destination for visitors especially during the winter season. The Lakeland Square Mall, located immediately north of I-4 at US 98 and its related development, is one of the greatest single traffic attractions to the I-4 corridor in central Polk County.

2.1 System Linkage

I-4 is a four-lane limited access freeway extending through central Florida to connect the west coast area of Tampa/I-275 with the east coast area of Daytona Beach/I-95. I-4 is the only east-west road of its kind in central Florida and as such, it sustains heavy traffic consisting of both commercial and private vehicles. Traffic and safety concerns along this interstate have increased in response to ongoing development throughout Florida. Proposed improvements to I-4 in Polk County are part of a larger project to improve the entire length of the interstate from Tampa to Daytona Beach.

According to the FDOT Draft Tentative Work Program, Fiscal Years 97/98 - 01/02, dated November 22, 1996 highway improvements (other than landscaping, lighting and resurfacing) directly connected to this project include:

Road Name	From/To	Type of Work
Fiscal Year 1996/1997		
US 98	I-4 to Carpenter's Way Road	Multi-Lane Reconstruction
Fiscal Year 1997/1998		
US 98	SR 546 to I-4	Multi-Lane Reconstruction
US 27	SR 544 to I-4	Multi-Lane Reconstruction
Fiscal Year 2000/2001		
Polk County Parkway	N. of CR 546 to I-4 at Mt. Olive Road	New Construction
Polk County Parkway	N. of US 92 to I-4 at Mt. Olive Road	Toll Plaza Construction

Note: A section of I-4 from CR 582 to SR 33 (Segment 3) is scheduled to be milled and resurfaced in Fiscal Year 1998/1999.

2.2 Capacity and Level of Service

Capacity analysis estimates the traffic-carrying ability of facilities over a range of "operational conditions" as defined by motorists' perception. A LOS generally describes conditions in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Six levels of service are defined in the Highway Capacity Manual (HCM) for each type of facility. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F, the worst. The lowest acceptable LOS for a rural interstate is LOS C, while LOS D isthe lowest acceptable LOS for an urban interstate. I-4 is classified as rural from SR 33 to the Polk/Osceola County line, and urban from west of Memorial Boulevard to SR 33.

The six levels of service for freeway facilities (uninterrupted flow) are defined as follows:

- LOS A represents free flow, where motorists are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speed and maneuverability is high.

- LOS B is in the range of stable flow; however, the presence of other users in the traffic stream is noticeable. Speed is unaffected, but there is a slight decline in maneuverability.

- LOS C is in the range of stable flow, but marks the beginning of the range of flow in which motorists are affected by others in the traffic stream. Both speed and maneuverability are affected.

- LOS D represents high density, but stable flow. Speed and freedom to maneuver are significantly restricted.

- LOS E represents operating conditions at or near capacity. Speeds are low, but with a relatively uniform flow, there is little or no freedom to maneuver.

- LOS F is used to define breakdown or forced flow.

Existing traffic along I-4 in Polk County represents a mix of inter-regional and local trips by single occupant vehicles (SOVs), high occupant vehicles (HOVs) and trucks. 1993 average annual daily traffic (AADT) volumes were obtained from counts conducted by the FDOT for all of the mainline links along I-4. These counts were compared to 1988 AADTs obtained from the 1989 I-4 Master Plan and other historical counts obtained from the FDOT. The comparison shows that traffic fluctuates from year to year and has not demonstrated a consistent growth rate.

Analysis of LOS was conducted on ramps and mainline links between interchanges for 1993 conditions to estimate the baseline operating conditions. Volume to capacity (V/C) ratios for design hour conditions were calculated using the 1985 HCM methodology. LOS was derived by correlating the resulting V/C values to the corresponding LOS thresholds in the HCM for a freeway with 110 km/h (70 mph) design

speed, 3.6 m (12 ft) lanes, a minimum of 1.8 m (6 ft) of lateral clearance and level terrain. The capacity of a facility with these characteristics is 2,000 passenger cars per hour per lane (pcphpl).

The 1993 I-4 mainline AADT, directional design hour volumes (DDHV), lane capacity, V/C ratio and LOS are shown in Table 2-1. The 1993 DDHV are depicted graphically in Figure 2-1 on pages 2-5 and 2-6. 1993 average annual daily traffic (AADT) volumes ranged from 45,880 to 63,000 vehicles per day. The existing four-lane facility functioned at an average LOS C in 1993. The I-4 mainline west of Memorial Boulevard and east of US 27 operated at LOS D in 1993. The remainder of the I-4 mainline operated at LOS C in 1993. Interchange ramps at Memorial Boulevard (westbound on-ramp) and US 27 (eastbound on-ramp and westbound off-ramp) operated at LOS E in 1993. Ramps at Memorial Boulevard (eastbound off-ramp) and US 27 (westbound on-ramp) functioned at LOS D in 1993. The remainder of the I-4 interchange ramps operated at LOS C or better in 1993. The 1993 LOS on the existing interchange ramps is shown in Table 2-2.

Table 2-1
YEAR 1993 I-4 MAINLINE TRAFFIC CHARACTERISTICS
I-4 Project Development and Environment Study

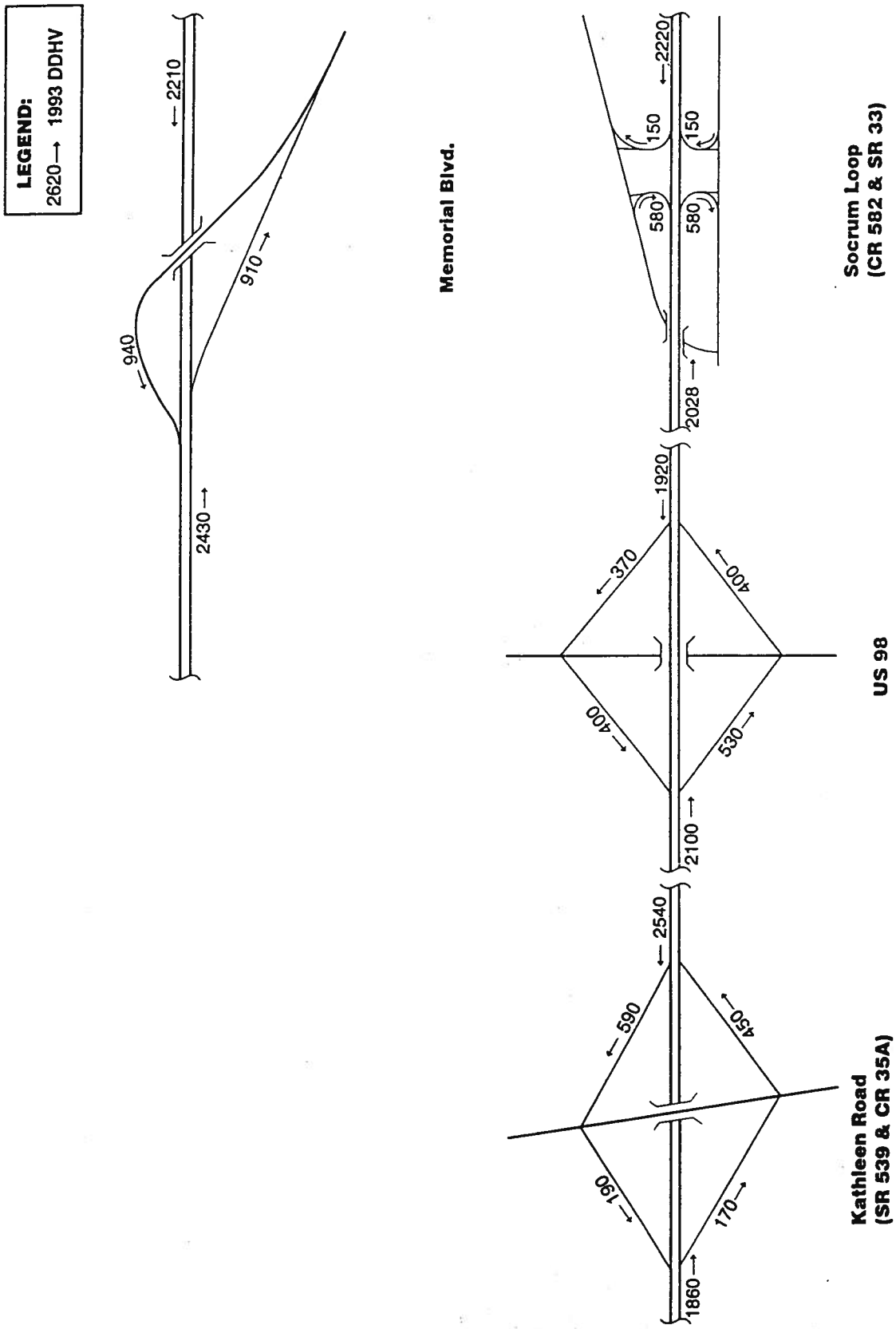
Roadway Link	1993 AADT	1993 DDHV	1993 DDHV (trucks)	1993 DDHV (pcph)	Lane Group Capacity	V/C Ratio	1993 LOS
West of Memorial Blvd. to Memorial Blvd.	63,000	3,309	397	3,586	4,000	0.90	D
Memorial Blvd. to Kathleen Road	47,652	2,323	279	2,517	4,000	0.63	C
Kathleen Road to US 98	52,000	2,668	320	2,891	4,000	0.72	C
US 98 to Socrum Loop Road	47,894	2,135	256	2,313	4,000	0.58	C
Socrum Loop Road to SR 33	47,000	2,316	278	2,509	4,000	0.63	C
SR 33 to SR 559	46,240	1,723	207	1,867	4,000	0.47	B
SR 559 to CR 557	45,880	2,117	254	2,293	4,000	0.57	C
CR 557 to US 27	46,000	2,724	327	2,951	4,000	0.74	C
US 27 to Polk/Osceola County line	57,000	2,882	346	3,123	4,000	0.78	D

Adjustment factors:

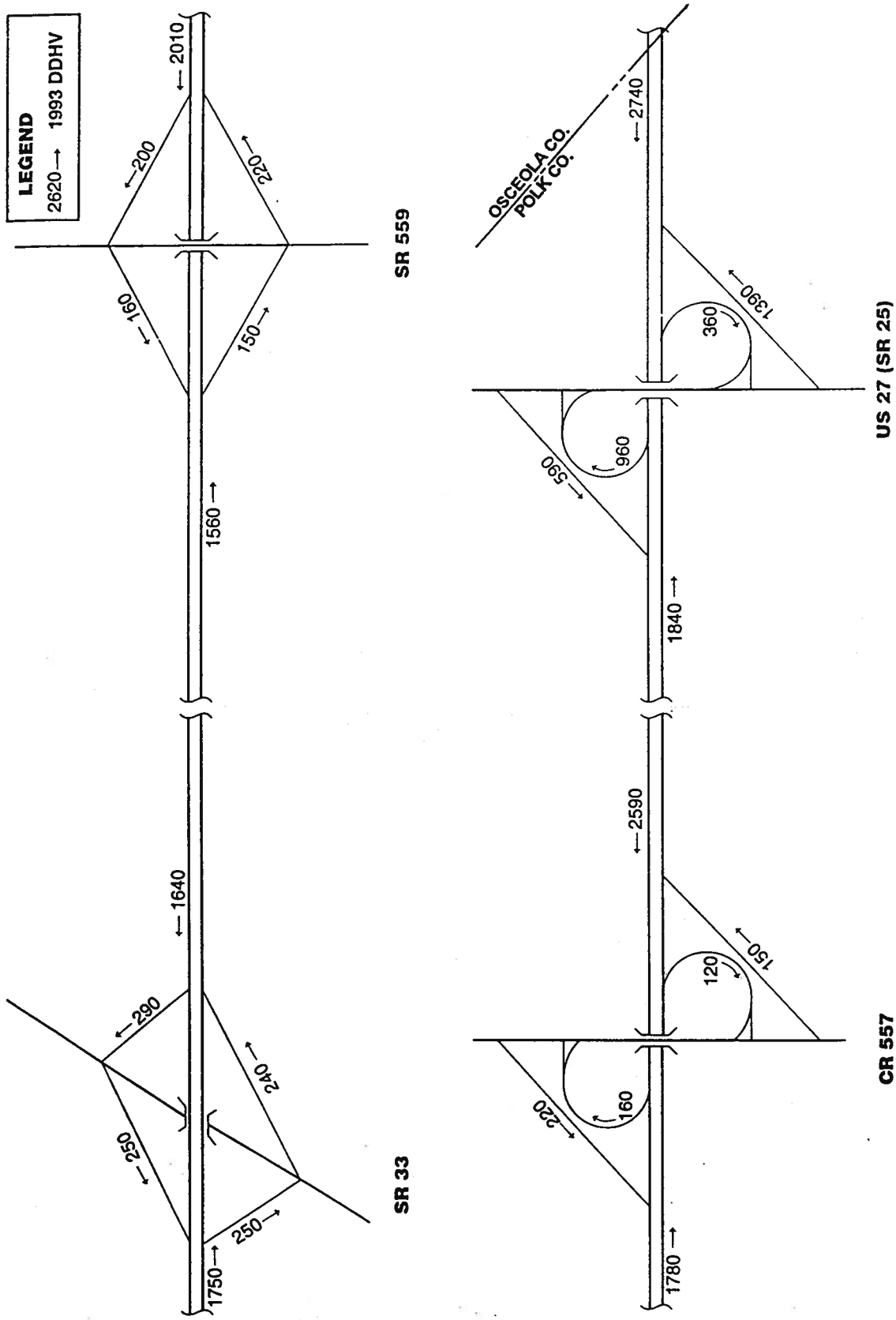
Peak Hour Factor	=	0.95
Basic Capacity	=	2,000 pcphpl
Number of Lanes on Mainline	=	2 per direction
Capacity of Mainline	=	4,000 pcph

Adjustment factors for trucks (fHV):

Design Hour Percent Trucks 12% fHV	=	0.923
Passenger Car Equivalent Et	=	1.7 (Table 3-3, 1985 HCM)



YEAR 1993 DIRECTIONAL DESIGN VOLUMES (MEMORIAL TO SOCRUM LOOP)	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 2-1a



YEAR 1993 DIRECTIONAL DESIGN VOLUMES (SR 33 TO US 27)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 2-1b

Table 2-2
YEAR 1993 INTERCHANGE RAMP LOS SUMMARY
I-4 Project Development and Environment Study

Interchange	Lanes / Movement	LOS	Interchange	Lanes / Movement	LOS
Memorial Blvd.			**SR 33**		
Eastbound Off-ramp	Two-lane/diverge	C/D/C[1]	Eastbound Off-ramp	One-lane/diverge	B
Westbound On-ramp	Two-lane/merge	D/E/D[2]	Eastbound On-ramp	One-lane/merge	C
N/A	N/A	N/A	Westbound Off-ramp	One-lane/diverge	B
N/A	N/A	N/A	Westbound On-ramp	One-lane/merge	C
Kathleen Road			**SR 559**		
Eastbound Off-ramp	One-lane/diverge	B	Eastbound Off-ramp	One-lane/diverge	B
Eastbound On-ramp	One-lane/merge	C	Eastbound On-ramp	One-lane/merge	B
Westbound Off-ramp	One-lane/diverge	C	Westbound Off-ramp	One-lane/diverge	C
Westbound On-ramp	One-lane/merge	C	Westbound On-ramp	One-lane/merge	C
US 98			**CR 557**		
Eastbound Off-ramp	One-lane/diverge	C	Eastbound Off-ramp	One-lane/diverge	B
Eastbound On-ramp	One-lane/merge	C	Eastbound On-ramp	One-lane/merge	C
Westbound Off-ramp	One-lane/diverge	C	Westbound Off-ramp	One-lane/diverge	C
Westbound On-ramp	One-lane/merge	C	Westbound On-ramp	One-lane/merge	C
Socrum Loop Road			**US 27**		
Eastbound Off-ramp	One-lane/diverge	C	Eastbound Off-ramp	One-lane/diverge	C
Eastbound On-ramp	One-lane/merge	B	Eastbound On-ramp	Two-lane/merge	D/E/D[2]
Westbound Off-ramp	One-lane/diverge	C	Westbound Off-ramp	One-lane/diverge	E
Westbound On-ramp	One-lane/merge	C	Westbound On-ramp	One-lane/merge	D

1 = LOS Diverge Area One/Diverge Area Two/Before Diverge
2 = LOS Merge Area One/Merge Area Two/After Merge

The combined general purpose and special use lane AADT projected for the year 2020 ranges from 97,300 to 128,900 vehicles per day. The proposed mainline facility (6+4) is projected to operate at an average LOS between C and D (in 2020), essentially the current LOS. Without the proposed improvements to I-4, the projected LOS for the existing mainline would degrade to a LOS F by 2020. The year 2020 I-4 mainline LOS analysis for the recommended typical section (6+4) is shown in Table 2-3. The analysis shows that the recommended alternative will provide acceptable LOS through 2020 and beyond.

Table No. 2-3

2020 MAINLINE LEVEL OF SERVICE ANALYSIS (6+4)

I-4 Project Development and Environment Study

Roadway Segment	Lane Type	2020 AADT	2020 DDHV	2020 DDHV Trucks	2020 Adjusted DDHV	2020 DDHV (pcph)	ADJUSTED K FACTOR	Lane Group Capacity	V/C Ratio	2020 DDHV LOS
West of County Line Road	General Purpose	75,930	3,956	920	4,458	5,101	9.00%	6,000	0.85	D
	Special Use	64,071	3,709	0	3,207	3,207	10.00%	4,000	0.80	D
From: County Line Road	General Purpose	79,932	4,165	945	4,667	5,328	9.00%	8,000	0.67	C
To: Polk Co. Pkwy West	Special Use	64,071	3,709	0	3,207	3,207	10.00%	4,000	0.80	D
From: Polk Co. Pkwy West	General Purpose	57,718	3,007	806	3,509	4,076	9.00%	6,000	0.68	C
To: West of Memorial Blvd.	Special Use	64,071	3,709	0	3,207	3,207	10.00%	4,000	0.80	D
From: West of Memorial Blvd.	General Purpose	69,817	3,638	798	4,140	4,776	9.15%	6,000	0.80	D
To: Memorial Blvd.	Special Use	51,973	3,009	0	2,507	2,507	10.00%	4,000	0.63	C
From: Memorial Blvd. *	General Purpose	45,362	2,722	688	3,224	3,706	9.00%	6,000	0.62	C
To: Kathleen Rd.	Special Use	51,973	3,009	0	2,507	2,507	10.00%	4,000	0.63	C
From: Kathleen Rd. *	General Purpose	72,180	3,845	822	4,347	4,923	9.00%	6,000	0.82	D
To: U.S. 98	Special Use	51,973	3,009	0	2,507	2,507	10.00%	4,000	0.63	C
From: U.S. 98	General Purpose	75,011	3,908	830	4,410	4,989	9.00%	6,000	0.83	D
To: CR 582	Special Use	51,973	3,009	0	2,507	2,507	10.00%	4,000	0.63	C
From: CR 582	General Purpose	76,926	4,008	842	4,510	5,102	9.00%	6,000	0.85	D
To: West of SR 33	Special Use	51,973	3,009	0	2,507	2,507	10.00%	4,000	0.63	C
From: West of SR 33	General Purpose	67,824	3,534	870	4,036	4,398	8.52%	6,000	0.73	C
To: SR 33	Special Use	61,074	3,713	0	3,211	3,211	10.50%	4,000	0.80	D
From: SR 33	General Purpose	58,874	3,068	814	3,570	4,142	9.00%	6,000	0.69	C
To: West of Polk Co. Pkwy. East	Special Use	61,074	3,713	0	3,211	3,211	10.50%	4,000	0.80	D
From: West of Polk Co. Pkwy. East	General Purpose	66,328	3,456	825	3,958	4,440	8.81%	6,000	0.74	C
To: Polk Co. Pkwy. East	Special Use	53,620	3,415	0	2,913	2,913	11.00%	4,000	0.73	C
From: Polk Co. Pkwy. East	General Purpose	73,419	3,826	869	4,328	4,935	9.00%	6,000	0.82	D
To: SR 559	Special Use	53,620	3,415	0	2,913	2,913	11.00%	4,000	0.73	C
From: SR 559	General Purpose	69,724	3,633	846	4,135	4,726	9.00%	6,000	0.79	D
To: West of CR 557	Special Use	53,620	3,415	0	2,913	2,913	11.00%	4,000	0.73	C
From: West of CR 557	General Purpose	64,407	3,356	853	3,858	4,388	8.86%	6,000	0.73	C
To: CR 557	Special Use	58,936	3,753	0	3,251	3,251	11.00%	4,000	0.81	D
From: CR 557	General Purpose	67,165	3,500	870	4,002	4,611	9.00%	6,000	0.77	C
To: US 27	Special Use	58,936	3,753	0	3,251	3,251	11.00%	4,000	0.81	D
East of US 27	General Purpose	55,664	4,302	967	4,804	5,478	9.00%	6,000	0.91	D
	Special Use	58,936	3,753	0	3,251	3,251	11.00%	4,000	0.81	D

BACKUP CALCULATIONS
TRUCK PERCENTAGE BY LANE TYPE

TRUCKS DDHV IN SU	TOTAL DDHV GP+SU	TRUCKS DDHV IN GP	% TRUCKS IN GP	% TRUCKS IN SU	fHV
	7,665	920	20.6%		0.87
0				0.0%	1.00
	7,874	945	20.2%		0.88
0				0.0%	1.00
	6,716	806	23.0%		0.86
0				0.0%	1.00
	6,647	798	19.3%		0.88
0				0.0%	1.00
	5,731	688	21.3%		0.87
0				0.0%	1.00
	6,854	822	18.9%		0.88
0				0.0%	1.00
	6,917	830	18.8%		0.88
0				0.0%	1.00
	7,017	842	18.7%		0.88
0				0.0%	1.00
	7,247	870	21.6%		0.87
0				0.0%	1.00
	6,781	814	22.8%		0.86
0				0.0%	1.00
	6,871	825	20.8%		0.87
0				0.0%	1.00
	7,241	869	20.1%		0.88
0				0.0%	1.00
	7,048	846	20.5%		0.88
0				0.0%	1.00
	7,109	853	22.1%		0.87
0				0.0%	1.00
	7,253	870	21.7%		0.87
0				0.0%	1.00
	8,055	967	20.1%		0.88
0				0.0%	1.00

Source: Volumes from KPMG/Peat Marwick 1/24-25/94.

* These two segments have been analyzed with the refined volumes determined from the ramp analysis. The DDHV is developed from the peak directional daily volume.

Adjustment Factors:

Peak Hour Factor = 0.95
Directional Factor (D)= 0.55
Ideal Capacity = 2,000 pcphpl
3 per direction General Purpose Lanes
2 per direction Special Use Lanes
Capacity of Mainline = 6,000 pcph General Purpose Lanes
4,000 pcph Special Use Lanes

Total Interregional Trips (AADT) = 56,313

DESIGN HOUR PERCENT TRUCKS:
Total Population = 12.00%
Interregional Trips = 14.00%

Average % Trucks in General Purpose Lane = 20.70%
Average % Trucks in Special Use Lane = 0.00%

Auxillary Lanes between County Line Rd. and Polk Cty. Pkwy. West:
Number of Auxillary Lanes = 1 per direction
Capacity of Auxillary Lanes = 2,000 pcph

2.3 Existing Roadway Deficiencies

Interstate 4 was originally constructed as a four-lane divided rural freeway between 1958 and 1964, and designed in accordance with 1954 American Association of State Highway Officials (AASHO) standards. The existing roadway has been compared against current minimum desirable interstate design criteria based on 1990 American Association of State Highway and Transportation Officials (AASHTO) standards and found to be deficient in the areas of typical section, horizontal alignment and vertical alignment, pavement structural conditions and bridge structural conditions. These deficiencies are discussed below. Refer to the Preliminary Engineering Report, June 1998, Revised August 1998 for a complete discussion.

2.3.1 Typical Section

The existing I-4 typical section contains four 3.6 m (12 ft) travel lanes, a 19.5 m (64 ft) depressed median, 3.0 m (10 ft) outside shoulders (2.4 m (8 ft) paved), and 2.4 m (8 ft) inside shoulders (1.2 m (4 ft) paved). The existing typical section is deficient in shoulder widths and clear zone requirements according to current interstate design standards. The existing I-4 typical section is shown in Figure 2-2 on page 2-10.

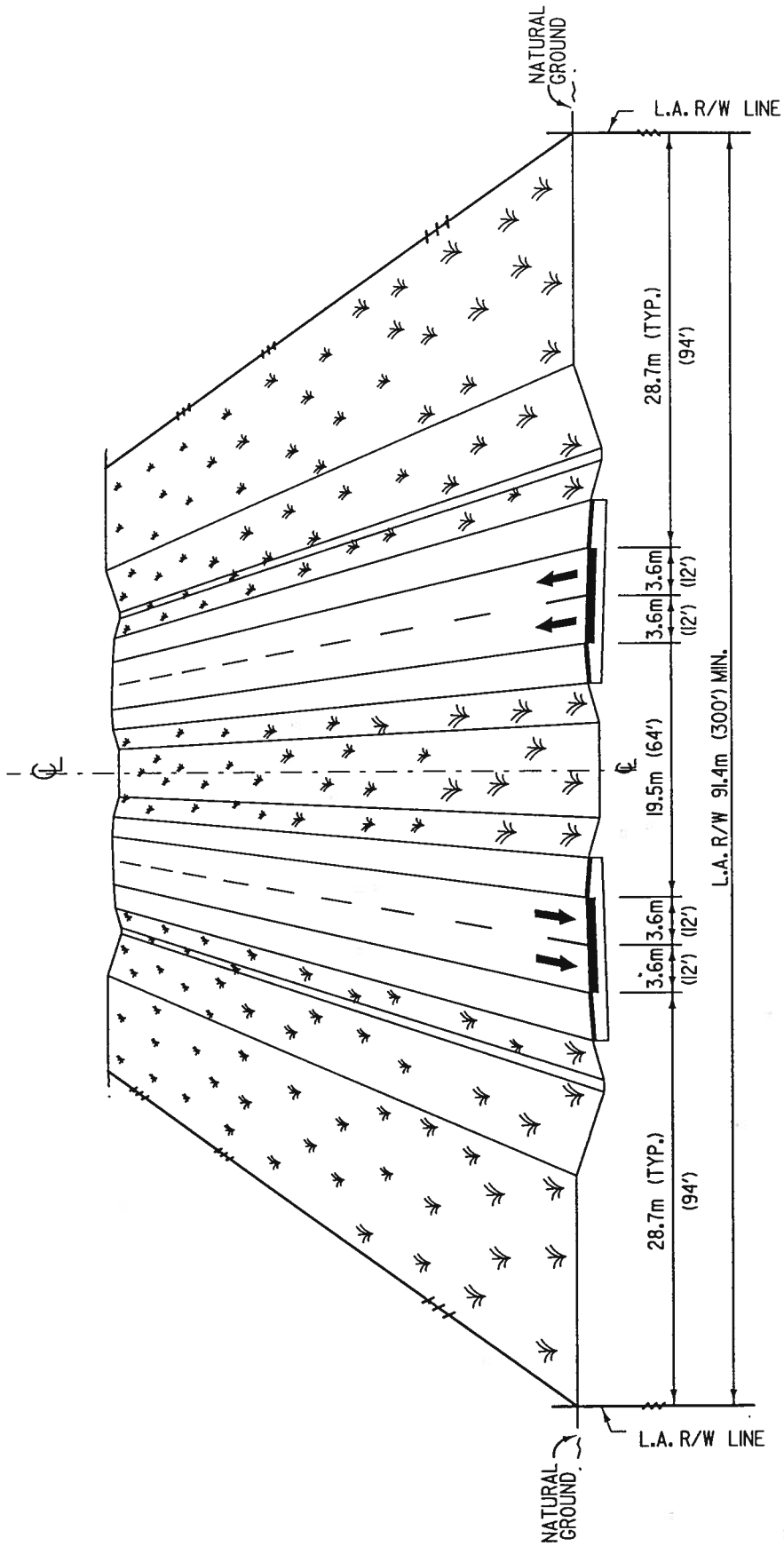
2.3.2 Horizontal Alignment

I-4 from west of Memorial Boulevard to SR 33 (Segments 2, 3 and 8) is classified as an urban interstate facility and was compared to current urban interstate design criteria. Two reverse horizontal curves on the westbound roadway in Segment 2 within the interchange area at Memorial Boulevard (P.I.s at Stations 614+52.55 and 625+33.94) were found to be inadequate according to current urban interstate design standards. From SR 33 to the Polk/Osceola County line (Segments 4, 5, 6, 7, and 9), I-4 is classified as a rural interstate facility and was compared to current rural interstate design criteria. More than half of the 22 mainline horizontal curves in this area were found to be inadequate according to current design standards. None of the eight existing interchanges fully meet current criteria for entrance or exit ramp terminal geometry. Most of the deficiencies at the interchanges were found in the acceleration/deceleration lane lengths and the ramp taper lengths.

2.3.3 Vertical Alignment

Profile grades vary from zero to six percent on the mainline roadway of I-4, some of which exceed the recommended three percent maximum for current interstate design. The crest vertical curves along the project corridor were designed for speeds of 105 km/h (65 mph) by 1954 AASHO standards. Nearly all of the I-4 mainline vertical curves for the length of the project do not meet current design standards.

The acceleration/deceleration lanes along the study corridor were designed to the circa 1960 required standards. These lanes lack sufficient length for necessary speed adjustments and are deficient according to current interstate design standards.



I-4 EXISTING TYPICAL SECTION (4+0)
4 GENERAL PURPOSE LANES
(WEST OF MEMORIAL BLVD. TO THE POLK/OSCEOLA COUNTY LINE)

EXISTING I-4 TYPICAL SECTION	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 2-2

The exit and entrance ramps at the existing interchanges were evaluated against current designstandards and revealed some form of deficiency. Most had inadequate K values[1] or insufficient vertical curve lengths. Of the seventeen grade separation structures along I-4, only four structures meet or exceed the current minimum vertical clearance requirement of 5.0 m (16.5 ft).

2.3.4 Pavement Structural Condition

I-4 is constructed of rigid pavement for the western-most 9.20 km (5.72 mi) of this project (MP 2.57 to MP 8.29). The rigid pavement extends from west of the Memorial Boulevard interchange to east of the Socrum Loop Road interchange (Segments 2, 8 and the western portion of Segment 3). The FDOT Rigid Pavement Condition Survey-1993 shows that I-4 has defect ratings of 6 for the right (eastbound) roadway and 8 for the left (westbound) roadway and ride ratings of 7 for the left roadway and 8 for the right roadway (structural ratings range from 0 to 10 with ratings below 6 being considered critical). Generally this indicates that the I-4 rigid pavement is in good condition. Thirty-plus years of use has shown some wear and tear. This is reflected in the defect and ride ratings (all above the critical level but less than the ultimate rating).

I-4 is constructed of flexible pavement for the remaining 38.18 km (23.73 mi) of the project (MP 8.29 to MP 32.02). Flexible pavement extends from east of the Socrum Loop Road interchange to the Polk/Osceola County line (eastern portion of Segment 3 and Segments 4, 5, 6, 7 and 9). The FDOT Flexible Pavement Condition Survey - 1993 shows that I-4 has ride ratings ranging from 6 to 9. Defect ratings range from 4 to 9 for cracks and 8 to 9 for ruts. The crack rating of 4 is for the western most 122 m (400 ft) of Segment 7. Generally this indicates that the I-4 flexible pavement is in good condition. One relatively short section at the western end of Segment 7 has a critical rating for cracking. Otherwise the ride and defect (cracks and ruts) ratings are above the critical level.

A windshield survey and a review of construction plans was conducted to identify areas where existing I-4 mainline pavement conditions indicate the possible presence of unsuitable subsurface conditions (peat, muck) beneath the roadway.

In general, the pavement condition is good for the length of the project, however, several areas displayed evidence of unsuitable subsurface conditions.

The concrete pavement section east of US 98 appears to be in generally good condition; however, some patches are present and one area of moderate cracking was observed near the westbound exit ramp for US 98. One minor pavement subsidence in the eastbound lane just east of CR 557 appears to be associated with the presence of pipe culvert backfill and has resulted in roadway settlement. Additional minor pavement subsidence within the Green Swamp area is thought to be associated with the presence of organic soils beneath the embankment. The outside paved shoulder of the I-4 westbound lane west of US 27 had the presence of organic soils or incomplete demucking beneath the embankment. An isolated area of shoulder sloughing was also observed in the eastbound lane. This isolated area has experienced a relatively significant sag estimated at 0.5 m (1.5 ft), presumably resulting from remaining organic soils beneath the roadway. Some shoulder sloughing was observed in the westbound lane west

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[1]Criterion for the flatness or sharpness of a vertical curve.

between US 27 and the Polk/Osceola County line is bifurcated and the organic deposits, suspected to be 3.1 m (10 ft) thick, are presumed to still be in place within the median in this area. The CR 532 partial interchange east of the Polk/Osceola County line also is suspected of having organic soils less than 1.8 m (6 ft) thick present within the infield area in the northwest quadrant of the interchange.

For further information regarding geotechnical and generalized soils data, refer to the Geotechnical Report dated February 1994.

2.3.5 Bridge Structural Conditions

Twenty-four bridges show deficient ratings in one or more of the rating capacities, including deck geometry, vertical and horizontal underclearance and safe load capacity. Of the sixteen bridges passing over I-4, only six meet or exceed the current minimum vertical clearance of 5 m (16.5 ft).

Tables 2-4 through 2-10 identify the current condition and year of construction for bridges in each segment of this project. The information in this section was taken from the Structural Inventory Assessment Survey (SIAS) and FDOT bridge inspection reports for each structure. A rating below 6 is considered critical. For more complete information, refer to the Preliminary Engineering Report, June 1998, Revised August 1998.

Table 2-4
CURRENT STRUCTURE CONDITION AND YEAR OF CONSTRUCTION
Segment 2
I-4 Project Development and Environment Study

Bridge Number	Year Const	Date of Last Inspect.	Date of Last SIAS	Suffic. Rating	Struct. Cond.	Deck Geom.	Under Clear. Vert/ Horiz.	Safe Load Capac.	Appr. Rdwy Align.
160074	1961	7/19/93	10/3/91	77	8	3	7	4	6
160170	1961	6/16/93	8/4/93	77.2	7	4	3	4	7
160171	1961	8/16/93	11/29/93	80.7	8	5	3	4	7
160172	1961	8/16/93	11/29/93	83.4	8	5	4	4	8
160173	1961	8/16/93	11/24/93	N/A	7	*	N/A	7	9
160113	1961	8/16/93	11/24/93	76.2	8	4	4	2	8
160112	1961	8/16/93	11/24/93	73.2	8	4	3	4	8

* = Not Rated, N/A = Not Applicable

Table 2-5
CURRENT STRUCTURE CONDITION AND YEAR OF CONSTRUCTION
Segment 8
I-4 Project Development and Environment Study

Bridge Number	Year Const	Date of Last Inspect.	Date of Last SIAS	Suffic. Rating	Struct. Cond.	Deck Geom.	Under Clear. Vert/ Horiz.	Safe Load Capac.	Appr. Rdwy Align.
160174	1961	8/16/93	11/24/93	73.7	7	2	4	6	8
160175	1961	8/16/93	11/24/93	73.6	7	2	4	6	7

Table 2-6
CURRENT STRUCTURE CONDITION AND YEAR OF CONSTRUCTION
Segment 3
I-4 Project Development and Environment Study

Bridge Number	Year Const	Date of Last Inspect.	Date of Last SIAS	Suffic. Rating	Struct. Cond.	Deck Geom.	Under Clear. Vert/ Horiz.	Safe Load Capac.	Appr. Rdwy Align.
160176	1961	8/16/93	11/24/93	77.2	7	4	2	2	7
160177	1961	8/16/93	11/24/93	87.2	8	4	4	6	7
160178	1961	8/16/93	11/18/93	89.3	7	7	4	6	7
160180	1961	8/16/93	11/29/93	76.9	7	4	2	2	8
160181	1961	6/16/93	8/16/93	79	8	3	6	6	8
160182	1961	6/16/93	7/21/93	79	7	3	6	6	8

Table 2-7
CURRENT STRUCTURE CONDITION AND YEAR OF CONSTRUCTION
Segment 4
I-4 Project Development and Environment Study

Bridge Number	Year Const	Date of Last Inspect.	Date of Last SIAS	Suffic. Rating	Struct. Cond.	Deck Geom.	Under Clear. Vert/ Horiz.	Safe Load Capac.	Appr. Rdwy Align.
160183	1961	7/9/93	10/7/91	77.2	7	2	9	3	8
160184	1961	7/19/93	10/10/91	76.5	8	3	5	6	8
160185	1961	7/19/93	9/27/93	75.5	8	3	5	6	8
160115	1961	8/12/93	9/30/93	77.6	*	4	2	4	8

* = Not Rated

Table 2-8
CURRENT STRUCTURE CONDITION AND YEAR OF CONSTRUCTION
Segment 5
I-4 Project Development and Environment Study

Bridge Number	Year Const	Date of Last Inspect.	Date of Last SIAS	Suffic. Rating	Struct. Cond.	Deck Geom.	Under Clear. Vert/ Horiz.	Safe Load Capac.	Appr. Rdwy Align.
160066	1961	10/6/93	11/12/93	76.8	7	4	3	5	9
160114	1961	8/17/93	11/24/93	82	7	4	5	4	8

Table 2-9
CURRENT STRUCTURE CONDITION AND YEAR OF CONSTRUCTION
Segment 9
I-4 Project Development and Environment Study

Bridge Number	Year Const	Date of Last Inspect.	Date of Last SIAS	Suffic. Rating	Struct. Cond.	Deck Geom.	Under Clear. Vert/ Horiz.	Safe Load Capac.	Appr. Rdwy Align.
160141	1961	8/12/93	9/14/93	77.6	7	3	5	5	7
160920	1961	8/12/93	9/14/93	77.5	7	3	5	5	7

Table 2-10
CURRENT STRUCTURE CONDITION AND YEAR OF CONSTRUCTION
Segment 7
I-4 Project Development and Environment Study

Bridge Number	Year Const	Date of Last Inspect.	Date of Last SIAS	Suffic. Rating	Struct. Cond.	Deck Geom.	Under Clear. Vert/ Horiz.	Safe Load Capac.	Appr. Rdwy Align.
160105	1961	8/12/93	9/30/93	83.9	*	5	5	4	9

* = Not Rated

The Sufficiency Ratings for the bridge structures range from 73.2 to 83.9 and the Structure Condition ratings range from 7 to 8. This would indicate that the structures are considered structurally sufficient as of the date of the last inspection. The Deck Geometry, Underclearance Vertical/Horizontal and Safe Load Capacity show ratings below the critical level. This is because the structures (designed in the late 1950's and early 1960's) have been found to be deficient according to current design standards.

2.4 Transportation Demand

The 1994 Master Plan was presented to the Lakeland-Winter Haven Transportation Planning Organization (TPO) on January 12, 1995. The TPO passed Resolution 95-01 to include the 1994 I-4 Master Plan in future updates of the Polk County Transportation Plan. The proposed improvements to I-4 in Polk County (Six general purpose lanes and four special use lanes) are also consistent withthe Polk County 2020 Long-Range Transportation Plan, adopted November 9, 1995. The Polk County and Lakeland 2020 Adopted Long-Range Transportation Plans are shown in Figures 2-3 on page 2-16 and 2-4 page 2-17.

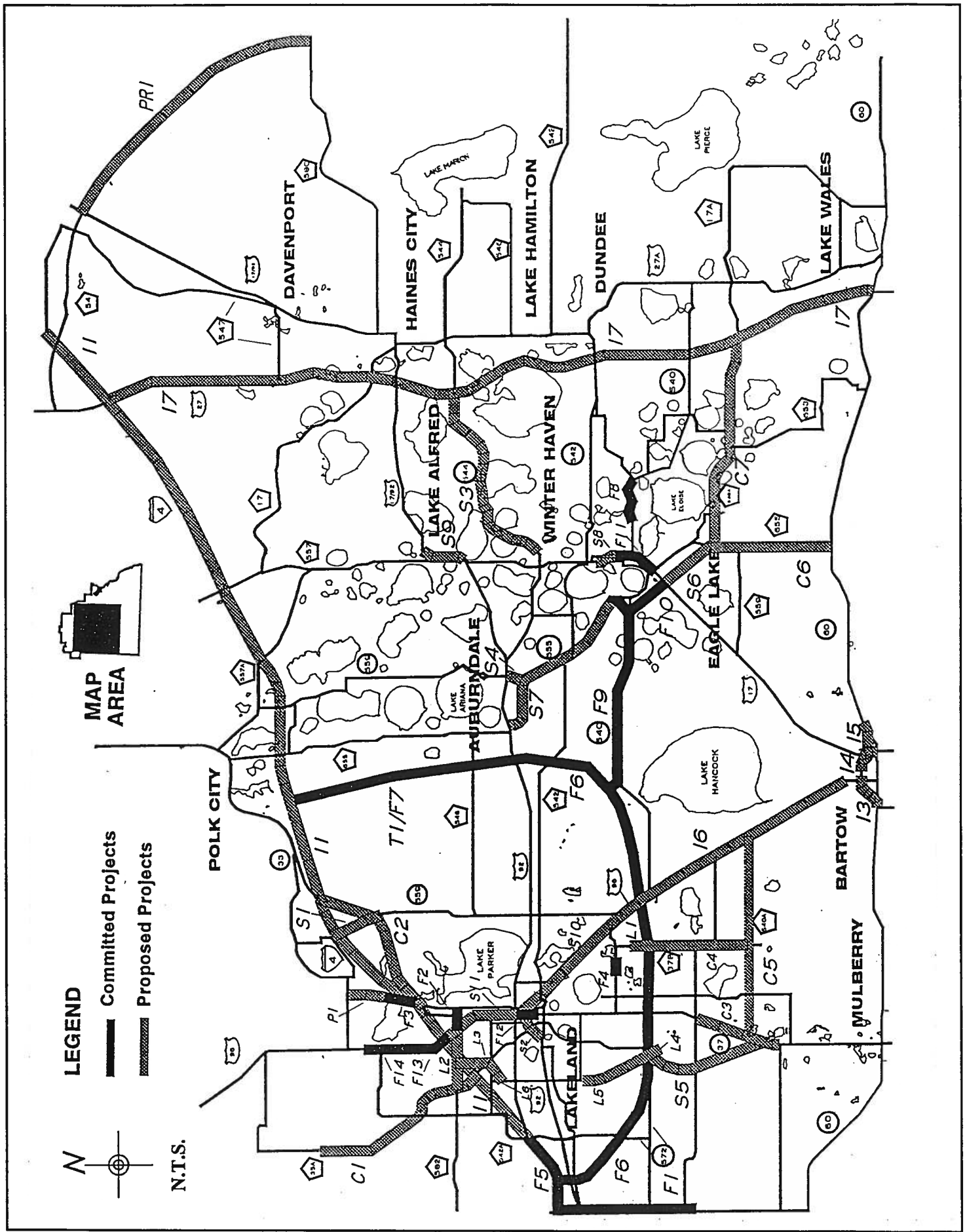
2.5 Federal, State or Local Governmental Authority

Comments on the proposed action have been offered by a number of local, State and Federal governmental units. Summarized below are comments received from the TPO for the Lakeland-Winter Haven Urbanized Areas. Additional comments, correspondence, and meeting minutes from these and other agencies are discussed in detail in Section 5.0 of this document, and included in Appendix B.

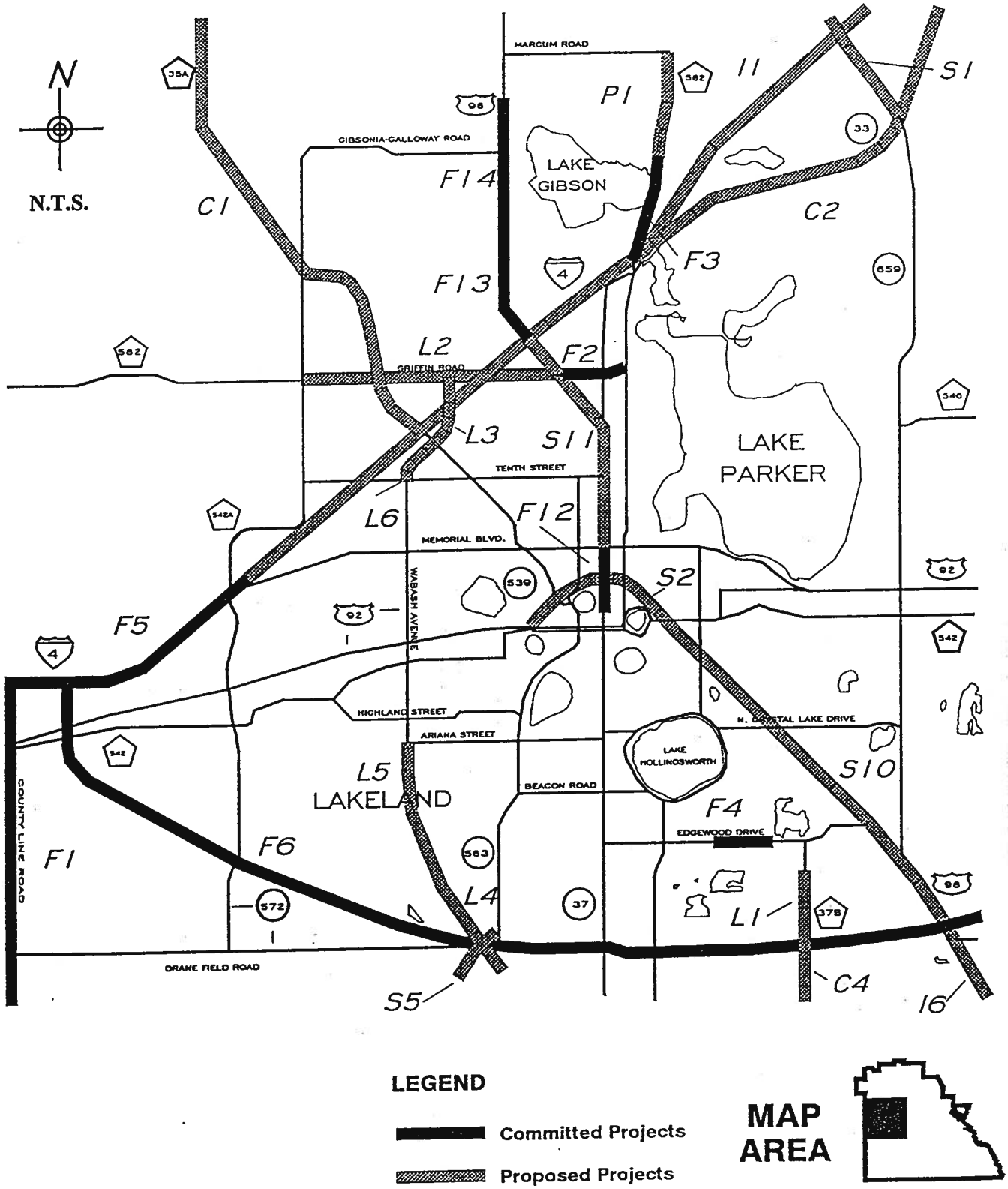
Transportation Planning Organization (TPO) for the Lakeland-Winter Haven Urbanized Areas-- The TPO passed Resolution 95-01 on January 12, 1995, to include the I-4 Master Plan in future updates of the Polk County Transportation Plan. The resolution stated that:

1. Multimodal alternatives were appropriately analyzed for improvements in the I-4 corridor;

2. The TPO was involved in the development of the I-4 Master Plan; and



2020 LONG-RANGE TRANSPORTATION PLAN: POLK COUNTY	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 2-3



LEGEND

Committed Projects

Proposed Projects

MAP AREA

2020 LONG-RANGE TRANSPORTATION PLAN: LAKELAND	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 2-4

3. The identified ultimate improved typical section for I-4 (6+4) and the preferred staging alternative (6+0) will be made part of the highway network alternatives and incorporated in the 2020 Long-Range Transportation Plan Update subject to forecasted financial resources reasonably expected to be available as required by 23 USC Part 450.318 and the USC Part 450.322.

2.6 Social Demands and Economic Development

The proposed improvements to I-4 would enhance community assets and the quality of life in Polk County. Improved level of traffic service, compatibility with projected land use and growth management plans, consistency with future transportation plans, improved emergency evacuation, improved highway safety and freedom of movement on I-4 are all amenities which contribute to the overall public acceptability of the proposed improvements.

Central Polk County is rapidly developing as a population support area for the major metropolitan areas of Tampa and Orlando. According to the Polk County 2020 Long-Range Transportation Plan, adopted on November 9, 1995, Polk County's population was projected at 721,863 for the year 2020. This equates to a population growth of 316,219 over a thirty-year period (1990-2020) and a simple annual growth rate of approximately 2.5 per cent. With the type of growth projected for Polk County, the traffic service on I-4 must be improved to meet the expected demand. Economic and social development of Polk County is directly related to the improvements of I-4. The western end of the I-4 corridor in Polk County is rapidly developing as a regional distribution center with the addition of several trucking and warehouse facilities in recent years.

The Polk County 2010 Future Land Use Maps, April 20, 1992; November 18, 1992; January 31, 1994; and October 4, 1994 and the Lakeland Year 2000 Land Use Plan, 1991, show that land use would remain predominantly commercial from County Line Road to Memorial Boulevard. Residential land uses would replace the agricultural land uses from Memorial Boulevard to Kathleen Roadand the area from Kathleen Road to US 98 would become predominantly a business park center. Residentialland use would continue to dominate from US 98 to SR 33. From SR 33 to SR 559, residential land use would replace the agricultural uses and is also designated as a Regional Activity Center. The Green Swamp area from CR 557 to US 27 would remain as natural/agricultural/rural residential. The US 27 interchange area would remain commercial. The area from US 27 to the Polk/Osceola County line is shown as a Select Area Plan on the Polk/Osceola future land use map. The Bridgewater Development of Regional Impact (DRI) is a mixed-use development approved for about 1,214 ha (3,000 ac) of property in the northeast section of the City of Lakeland. The majority of the property is situated on the south side of I-4 between Socrum Loop Road and SR 33 interchanges with I-4.

Future land use maps for Lakeland and Polk County are included in Appendix C.

Major retail developments and large employers located along the project corridorinclude Country Hearth and Pepperidge Farm bakeries, Owens Illinois and Cardinal Industries, southeast of I-4 and Kathleen Road (Segment 2) and the Lakeland Square Mall, north of US 98 (Segment 8). Other traffic generators include Winston Elementary School north of I-4 (Segment 2), the Lakeland Auto Auction, north of I-4 at SR 33 (Segment 3) and the US 27 commercial corridor (Segment 9).

Several apartment complexes, residential subdivisions and mobile home parks are present along the project corridor. Winston Heights subdivision is located at the northwest intersection of I-4 and Galloway Road (Segment 2). Lakeland Harbor Mobile Homes is located southeast ofthe intersection of I-4 and Socrum Loop Road, the Paddock Club Apartments are located north of I-4 between Socrum Loop Road and Old Combee Road, and the Stoll Manor Mobile Home Park is located north of I-4 at Wal Williams Road (Segment 3).

Wedgewood Golf and Country Club is located northeast of the intersection of I-4 and Carpenter's Way Road and the Sandpiper Golf and Country Club is located north of I-4 on Walt Loop Road (Segment 3).

The Polk County Comprehensive Plan, Adopted November 18, 1992; Revised January 31, 1994 identified Boardwalk & Baseball (now Baseball City) as a Development ofRegional Impact (DRI). This now defunct facility, located in Segment 9 at the southeast quadrant of the I-4/US 27 interchange, was predominantly a tourist-related development which also contained recreationalvehicle parking and multi-family housing. Located on 840 acres, the theme park and hotel sites on the portion of the development south of I-4 were zoned commercial. The site is currently a spring training complex for a Major League Baseball team.

The Growth Management Plan incorporated into the Lakeland Comprehensive Plan Year: 1990-2000, requires that public facilities, including major roadways such as I-4, and services necessary to support proposed development, occur concurrent with the impacts of such development. The proposed improvements to I-4 would benefit the anticipated social and economic demands within this corridor by enhancing travel mobility, improving accessibility to the area and providing forthe continuous movement of people and goods with increased safety and efficiency. The proposed widening of I-4 would enhance community assets by providing the road network improvements necessary to support the future land use projected for Polk County. The Lakeland - Winter Haven Urban Area is and will continue to be a prime residential and resort destination, particularly during the winter season.

2.7 Safety

Accident data was obtained from reports available from the FDOT computer resources. The information used in the analysis includes the years 1988 through 1992 and encompasses the area from west of Memorial Boulevard to the Polk/Osceola County line along the I-4 mainline. A total of 637 accidents occurred on the I-4 mainline within the project limits, causing 651 injuries and 28 fatalities from 1988 through 1992. The majority of these accidents (57 percent) occurred during the daylight hours. Thirty-nine percent of the total accidents were either rear-end, side swipe, angle or head-on collisions; of which rear-end collisions were the most prevalent accident type. Tables 2-11 and 2-12 show the specific breakdown by type of I-4 mainline accidents.

Table 2-11
SUMMARY FOR I-4 MAINLINE BY TYPE OF ACCIDENT
I-4 Project Development and Environment Study

Accident Type	1988	1989	1990	1991	1992	Total
Head On	0	0	0	1	0	1
Angle	11	11	10	6	10	48
Rear End	43	32	28	20	28	151
Side Swipe	14	10	4	6	14	48
Other	102	92	72	76	47	389
Total	170	145	114	109	99	637

Table 2-12
ACCIDENT SUMMARY FOR I-4 MAINLINE BY LIGHT CONDITIONS
I-4 Project Development and Environment Study

Conditions	1988	1989	1990	1991	1992	Total
Daylight	91	82	68	68	55	364
Dusk	5	6	3	0	2	16
Dawn	5	2	3	1	1	12
Dark w/ Street Light	3	5	2	4	2	16
Dark (No Street Light)	64	50	37	36	39	226
Unknown	2	0	1	0	0	3
Total	170	145	114	109	99	637

Table 2-13 shows the number of fatalities resulting from accidents on I-4 by segment. Segments 3 and 4 had the highest number of crashes, while Segments 7 and 9 had the highest percentage of fatalities at 11 percent and 7 percent, respectively, which are very high rates, as are the 5 percent and 4 percent rates for Segments 2 and 3, respectively. Table 2-14 shows the safety ratios for 1992 on I-4 by segment. A safety ratio greater than or equal to one indicates a high crash segment, which means that the segment of roadway is experiencing a higher number of crashes than similar roadways on a state-wide basis.

Table 2-13
CRASHES AND FATALITIES
BY SEGMENT
I-4 Project Development and Environment Study

Segment	Crashes	Fatalities	% Fatalities
2	99	5	5
3	119	5	4
4	119	4	3
5	96	3	3
6	85	2	2
7	54	6	11
8	24	0	0
9	41	3	7

Table 2-14
SAFETY RATIOS BY SEGMENT FOR THE YEAR 1992
I-4 Project Development and Environment Study

Segment	Crashes	Safety Ratio
2	17	0.639
3	20	0.552
4	21	0.571
5	15	0.592
6	10	0.268
7	7	0.358
8	2	0.429
9	7	1.110

Safety data for the years studied (Table 2-11) reveals a decline in the number of accidents and the total economic loss per year. The number of accidents in 1992 decreased by 42 percent as compared to the number of accidents in 1988 and the amount of economic loss resulting from these accidents decreased by 50 percent. The decrease in accidents could be attributed to increase in law enforcement. Several enforcement tactics have been implemented, including an increase in patrol officers along the I-4 corridor during the holidays and selective enforcement for assigned sections of roadway at particular times of the

day that monitor and control speeding through the use of radar in patrol cars and aircraft. The "Stay Alert! Survive the I-4 Drive!" campaign has also increased awareness for safety along the I-4 corridor.

Table 2-14 shows that all segments on I-4, except Segment 9 (the US 27/I-4 interchange) operated safely in 1992. The safety ratio of 1.11 for the US 27 interchange indicates that this segment of I-4 operated at lower levels of safety in 1992 than comparable segments of the interstate within the State of Florida.

Although the majority of I-4 experienced a significantly lower number of crashes than comparable segments of interstate highways statewide, the extremely high fatality rates in Segments 2, 3, 7, and 9 indicates that crashes are more severe than the average in these segments. This could possibly be attributed to the higher percentage of heavy trucks in the traffic stream on I-4, many of which travel at excessive speeds. National safety statistics show that crashes involving automobiles and heavy trucks have an extremely high probability of producing fatalities.

For further safety information, refer to the Preliminary Engineering Report, June 1998, Revised August 1998.

2.8 Navigation

The proposed project does not involve navigable waterway crossings.

3.0 ALTERNATIVES CONSIDERED

The analysis described in this section follows the project development process byexamining the various alternatives considered (No-Project, Multimodal, Transportation System Management and Construction) for this project. The need for the improvements to I-4 is documented in Section 2.0 of this report, and this section describes the reasoning behind the analysis for each of the alternatives and why they were rejected or accepted for further evaluation.

3.1 No-Project Alternative

The No-Project Alternative examines the possibility ofleaving I-4 in its current condition while allowing for routine maintenance. There are distinct advantages and disadvantages associatedwith the No-Project Alternative. Based on the considerations listed below, the proposed action has been developed as a design alternative. The No-Project Alternative will remain a viable alternate throughout the study process until after the public hearings, when the final recommendations will be made.

3.1.1 Advantages

1. No inconvenience to traffic flow or development due to construction operations.

2. No disruption to commerce, no residential relocation and no right-of-way acquisition would be necessary.

3. No expenditure of funds for right-of-way acquisition, engineering design or construction.

4. No impacts to the adjacent natural and human environment.

3.1.2 Disadvantages

1. Increase in traffic congestion and road user cost, unacceptable LOS and an increase in accident potential as traffic volumes increase on an already congested major thoroughfare.

2. Continued rise in maintenance cost due to a potential deterioration of the roadway.

3. The roadway will not be compatible with the future transportation network as defined in the Polk County 2020 Transportation Plan and therefore would require additional improvements to other facilities.

4. Increase in carbon monoxide and other air pollutants due to increased traffic congestion

5. Increase in traffic demand which would exceed roadway capacity.

6. No improvement in emergency service response time or in the highway's use as a critical weather emergency evacuation route through Polk County.

3.2 Multimodal Alternatives

Multimodal alternatives were analyzed in the Master Plan phase of this project. The Multimodal Alternative utilizes public transportation or alternate transportation modes to substitute for the public use of personal motor vehicles. As discussed below, no further study of multimodal transportation systems will be analyzed in this study because these systems do not address the facility's capacity overload problems as well as serve the public's local or regional transportation needs.

3.2.1 Rail Service

Of the multimodal public transportation systems, a rail system is not a viable substitute for the I-4 roadway improvements based on cost and demographics. Data from the FDOT 1993 Florida High Speed and Intercity Rail Market and Ridership Study was used to forecast high speed intercity rail trips. It is estimated in the 1994 I-4 Master Plan that the forecasted rail trips in the I-4 corridor would divert an average of 375 daily vehicle trips (ADT) from Lakeland/Polk County to the Tampa Bay area, 750 daily vehicle trips from Lakeland/Polk County to the Orlando area, and 3,742 daily vehicle trips from the Tampa Bay area through Polk County to the Orlando area (and vice versa). This estimated reduction in ADT is not sufficient to affect the projected LOS on I-4. Provision for rail service in the median of the proposed I-4 typical section is a matter of FDOT policy, however, (based on current available technology) ridership estimates through the design year 2020 do not justify the costs associated with a rail system as a multimodal public transportation alternative to the proposed I-4 roadway improvements.

Therefore, rail service was rejected as a multimodal transportation alternative to the proposed improvements to I-4.

Note: The FDOT is currently reviewing proposals for high speed intercity rail systems. One of the proposed routes is along (or within) the I-4 corridor between Orlando and Tampa. To date, a final decision has not been made regarding the high speed rail proposals. It is anticipated that the high speed intercity rail (if approved) would not substitute for the daily use of I-4 by the driving public.

3.2.2 Bus Service

Local Bus Service -- Local public transportation becomes efficient when there are large numbers of people with definite embarkation and destination locations. With the exception of LakelandSquare Mall, this project corridor is not a typical end destination region (such as a downtown business center) and therefore, does not lend itself well to local public bus transit as a means of relieving traffic congestion. A bus system uses the same public highway facilities as other vehicles and is subject to the same traffic congestion difficulties. Although bus systems can serve the public on a door-to-door basis, the widely dispersed population prefers using their private vehicles. Private vehicles will continue to be predominantly used into the foreseeable future. The Citrus Connection (the Lakeland local bus transit system) does not use I-4 for any of its routes and has no plans to expand bus service in the I-4 corridor through the design year 2020.

Regional Bus Service -- The Central Florida I-4 Study considered the market for commuter travel between Polk County and Central Florida (Orlando area). The local transit agencies in that area have no plans to include commuter service into Polk County. The transit agencies in the Tampa Bay area have also examined the demand for commuter service in Polk County and made the determination that further expansion of bus systems into Polk County is not economically justified within the design year 2020. The forecasting models for Polk County do not indicate a large market for intra-county trips in the I-4 corridor.

Therefore, bus service was rejected as a multimodal transportation alternative to the proposed improvements to I-4.

3.2.3 Pedestrian and Bicycle Service

Florida Statutes prohibit pedestrian and non-motorized bicycle traffic on limited access interstate facilities such as I-4.

3.3 Transportation System Management Alternative

Transportation System Management (TSM) activities such as interchange ramp improvements, separate turn lanes, ramp terminal traffic signal timing optimization, improvements to signing, marking and roadway lighting would improve traffic safety. However, projected traffic volumes demand the additional I-4 through lanes (six general purpose and four special use) to provide for the required capacity through the design year 2020. The construction of one additional I-4 travel lane in each direction would provide an acceptable mainline LOS through the year 2008. However, this alternative could only be temporary in nature because any improvements not conforming to the ultimate typical section (e.g., widening to the median or adding lanes to the outside of the existing lanes) would have to be totally replaced. The cost of this type of temporary improvement for just a few years of service is not economically justified.

Therefore, the TSM alternative was rejected as a transportation alternative to the proposed improvements to I-4.

3.4 Construction Alternatives

The study alternatives considered for the I-4 project are construction alternatives because the No-Project, Multimodal and TSM alternatives do not meet the future transportation needs of the region. Without improvements to this section of I-4, transportation congestion will increase as the LOS falls below "E" and the emergency and social services that depend on an unencumbered transportation corridor will eventually deteriorate to an unacceptable level. The right-of-way alternatives considered for this project were based on the avoidance and minimization strategy (left, right and center analysis) described in the Corridor Analysis Report, February 1995, Revised September 1995, included in the Appendix of the Preliminary Engineering Report, June 1998, Revised August 1998.

The construction alternatives evaluated include various alignment configurations and typical sections within the existing corridor rather than alternate locations or corridors. The proposed improvements are required to upgrade I-4 to conform to the local and regional transportation planning and provide the required projected traffic capacity.

3.4.1 Corridor Analysis

An I-4 Corridor Analysis Report, February 1995, Revised September 1995 has been prepared for this project (included as an appendix to the Preliminary Engineering Report, June 1998, Revised August 1998). In addition, Alignment Justification Reports were prepared by the preliminary engineering consultants for Segments 2, 3, 4, 5, 6 and 7. The analysis contained in those reports has been evaluated and incorporated, as appropriate, into the I-4 Corridor Analysis Report. The corridor analysis discusses the character of the various segments along I-4 and the potential impacts associated with the proposed I-4 improvements in those segments. The recommended typical sections and alignments utilized the avoidance strategy recommended in the corridor analysis.

Evaluation of Alternate Corridors -- The corridor analysis for the I-4 project has been limited to the existing corridor. It has been determined by the FDOT that relocation of I-4 to an alternate corridor is not a viable option for this project. Improvements to I-4 in its existing location is an integral part of the overall long-range transportation plan for Polk County and the City of Lakeland. Planned improvements to connecting roadways as well as planned and existing development of the existing corridor are also tied to the improvements to I-4 in its existing location. Factors such as interchange spacing, gross relocations (business and residential), community disruption, right-of-way costs and environmental impacts were considered by the FDOT in making the determination that alternate corridors were not viable options to the existing corridor.

Evaluation of Existing Corridor -- The existing I-4 corridor was evaluated to develop a strategy to minimize or avoid impacts to the human and natural environment by considering widening to the left (north), right (south) or centered on the existing alignment. A preliminary evaluation of the existing corridor was conducted using field observations and document research. The avoidance strategy recommended in the Corridor Analysis Report was developed with the intent to minimize impacts to wetlands, hazardous materials and petroleum sites, historic and archaeologic sites, business and residential relocations and community services, and was used in selecting the preferred alignment for the proposed improvements to I-4. The alignment strategy, coupled with cost and environmental analysis forms the basis for selecting the alternatives which have been evaluated in this study.

The proposed alignment recommendations are based on a preliminary corridor reconnaissance and data collected during the master plan phase of the I-4 project. Subsequent detailed analyses of the environmental concerns expressed in the I-4 Corridor Analysis Report were used to refine the final recommended alignment. The alignment recommendations in the following sections of this report were developed as a strategy to avoid and minimize impacts to the human and natural environment of the I-4 corridor.

Generally, a centered alignment for the proposed improvements would make maintenance of traffic (MOT) during construction simpler and less costly. Except in the bifurcated median areas, the existing I-4 lanes could be kept open while the six new general purpose lanes are constructed. This would significantly minimize or completely avoid additional impacts during the construction phase (such as temporary pavement detours outside the proposed right-of-way construction easements). With certain exceptions dictated by environmental or physical constraints, the simplified MOT and minimized environmental impacts leads this report to recommend a generally centered alignment for the proposed improvements to I-4. The exceptions to a centered alignment are noted in Section 3.4.3 of this report.

The alignment strategy developed through the corridor analysis is intended to minimize impacts to wetlands, hazardous materials and petroleum sites, threatened or endangered species, flood plains, noise sensitive sites, historic and archaeologic sites, business and residential relocations, major utilities, cultural resources and community services.

3.4.2 Typical Sections

Four typical section alternatives were initially evaluated for this project. All of the typical section alternatives have six 3.6 m (12 ft) general purpose lanes (three each way), four 3.6 m (12 ft) special use lanes (two each way) and provision for future rail service in the 20.0 m (66 ft minimum) median. The special use lanes would be separated from the general purpose lanes by two 3.6 m (12 ft) shoulders and a barrier wall. The shorthand notation for the typical section alternatives with six general purpose lanes and four special use lanes is 6+4. The difference in the typical sections is in the right-of-way requirements for the border (outside edge of pavement to proposed right-of-way).

The I-4 Multimodal Interstate Master Plan was prepared using the "soft" conversion from metric units to English units. The conversions from metric units reflect former equivalent English standards (where former standards exist). For example, the metric unit standard lane width is 3.6 m and the English unit standard lane width is 12 ft. (Actually, 3.6 m equals 11.81 ft and 12 ft equals 3.66 m.) This Environmental Assessment and accompanying documents are also prepared using "soft" conversion. The preliminary engineering consultants prepared their engineering concepts in metric units. Conversions back and forth between metric and English standards can cause confusion, particularly when adding a series of typical section components to arrive at a total right-of-way width. For purposes of this report, overall right-of-way width is considered the most critical dimension to determine the potential environmental impacts associated with each typical section and is shown as a "hard" conversion from the total metric unit width.

The I-4 Master Plan was based on a typical section total width described as 129 m (423.2 ft). This typical included a border width of 28.7 m (94.2 ft) from the outside edge of the travel lane to the right-of-way. The FDOT Plans Preparation Manual Revision of July 1, 1995 requires a border for freeways with flush shoulders (including interchange ramps) as 25 m from the outside point of the shoulder to the right-of-way line. This refinement to the border definition changed the overall dimension of the I-4 Master Plan Ultimate Typical section to 128.8 m (422.6 ft). This border requirement also eliminated reduced variations of the ultimate rural interstate typical section from further consideration.

91.4 m (300 ft) Urban Interstate Typical Section (6+4) - I-4 in Polk County is classified as an urban interstate facility from the Polk/Hillsborough County line to SR33. An urban freeway typical section

was developed containing all of the required lane, shoulder and median widths (including provisions for future rail service). This typical section (including outside retaining or barrier walls) is 80 m (262.5 ft) wide and could be constructed within the existing 91.4 m (300 ft) right-of-way. Constructing an urban freeway typical section within the existing right-of-way avoids additional impacts to the human and natural environment and eliminates additional right-of-way and construction costs. For this reason, only the 91.4 m (300 ft) urban typical section was evaluated for use in Segments 2, 8 and 3.

This urban interstate typical section could be constructed within the existing I-4 typical right-of-way of 91.4 m (300 ft). To accomplish this, storm sewer systems and retaining walls, as appropriate, would be incorporated into the design of the interstate facility. I-4 is classified as an urban interstate facility from west of Memorial Boulevard to east of SR 33. Because of the reduced right-of-way cost and reduced impacts to the human and natural environment of the I-4 corridor and the urban interstate classification, this typical section was selected to be analyzed further for use in Segments 2, 8 and 3 (see Figure 1-2, page 1-4).

128.8 m (422.6 ft) Rural Interstate Typical Section (6+4) - I-4 is classified as a rural interstate facility from SR 33 to the Polk Osceola County line. Initially three rural typical sections were evaluated for this rural classification: 1) 104.9 m (344 ft) rural typical section for Segments 4, 5, 6, 7 and 9; 2) 121.9 m (400 ft) rural typical section for Segment 6; and 3) the 128.8 m (422.6 ft) rural typical section for Segments 4, 5, 6, 7 and 9. The 25 m (82 ft) border requirement for freeways with flush shoulders eliminated all but the Master Plan Ultimate Typical Section for consideration. A left-center-right corridor analysis was performed to assess the environmental impacts and costs associated with the 128.8m (422.6 ft) rural interstate typical section in Segments 4, 5, 6, 7 and 9.

The 1994 I-4 Master Plan approved typical section limits the I-4 improvements to ten lanes (6 general purpose lanes physically separated from 4 special use lanes), sufficient median width to provide for future rail service and a maximum right-of-way width of 128.8 m (422.6 ft).

This is a rural interstate typical section requiring 128.8 m (422.6 ft) of right-of-way. Typically, an additional 37.4 m (122.6 ft) of right-of-way would be required for this typical section. The border from the outside edge of the shoulder to right-of-way line for this typical section is 25 m (82 ft). The FDOT District 1 established the 6+4 Master Plan Ultimate Typical Section (approved by the FHWA) as the maximum interstate typical section. This typical section was used as the basis for the alternatives evaluation in the 1994 I-4 Master Plan. Because of the significant additional costs for right-of-way and the extensive environmental consequences (documented in the 1994 I-4 Master Plan) of this typical section as compared to the 91.4 m (300 ft) urban interstate typical and the 104.9 m (344 ft) and 121.9 m (400 ft) rural interstate typical sections, the 129.0 m (424 ft) Master Plan Ultimate Typical Section was initially rejected for further analyses. However, the July 1, 1995 border requirement made this typical section the minimum right-of-way width that could be evaluated for rural interstate facilities. All other reduced rural typical sections were eliminated from further study.

The 128.8 m (422.6 ft) rural interstate typical section was evaluated for Segments 4, 5, 6, 7 and 9 (see Figure 1-3, page 1-5). The results of the evaluation of the typical sections are shown in the alternatives evaluation matrices in Section 3.5.

3.4.3 Alignments

The alignment configurations considered for this project were based on the avoidance and minimization strategy developed in the corridor analysis described in Section 3.4.1 of this report and in the Corridor Analysis Report. Alignments within the existing right-of-way were evaluated for Segments 2, 8 and 3. Alignments left, right and center were evaluated for Segments 4, 5, 6, 7 and 9. The results of the alignment evaluation are shown in the alternatives evaluation matrices in Section 3.5. Generally, the preferred alignment is centered for the length of the project. However, in certain areas (Segments 2, 3, 4 and 7) the preferred alignment is a combination of left (north), center and right (south) alignments to minimize or avoid impacts and reduce costs. Information for specific alignment shifts within project segments is provided.

Segment 2 - The alignment in Segment 2 begins shifted to the right because of the alignment shift in Segment 1 (outside the project limits for this project). The shift to the right is due to the potentially significant business damage and relocation costs that would be associated with a centered or left alignment in Segment 1 and the avoidance of the New Home Baptist Church Cemetery adjacent to the left right-of-way at Memorial Boulevard. The recommended typical section for Segment 2 is the 91.4 m (300 ft) urban interstate section (6+4). However, between Kathleen Road and US 98, 3.6 m (12 ft) auxiliary lanes are required in both directions. Even though the additional auxiliary lanes would fit within the existing right-of-way, the geometry of the eastbound I-4 on-ramp from Kathleen Road requires that the I-4 mainline alignment be shifted to the left about 6.7 m (22 ft). This would require relocating the FGT gas pipeline adjacent to the right-of-way (estimated relocation cost of about $990,000) and impact the City of Lakeland 230 kV electric transmission line (estimated relocation of about $1,000,000) but would avoid the four Lakeland Northwest Well Field well heads adjacent to the right right-of-way (estimated relocation cost of about $4,000,000). This alignment shift would also require right-of-way from the Victory Assembly of God Church property (avoiding the parking area). However, weighing the social and economic impacts of relocating the gas pipeline and affecting the church property against the potential significant adverse effects caused by impacting the well heads and well field zone of protection justifies the shift to the left between Kathleen Road and US 98.

Segment 3 - The Corridor Analysis Report recommends that the I-4 mainline be shifted to the right through the CR 582 (Socrum Loop Road) interchange (Segment 3) to avoid impacts to the Lake Gibson Church of Christ, the Holiday Inn, the Paddock Club Apartments and the FGT pipeline. The I-4 westbound on-ramp and off-ramp at CR 582 would require two lanes and therefore require that the I-4 mainline be shifted to the right to accommodate the additional ramp laneage and minimize impacts.

Segment 4 - The alignment in Segment 4 shifts to the right just east of the CR 655 overpass and remains shifted to the right through the SR 559 interchange. This shift was made to avoid open water/wetland impacts to Lake Agnes and Little Lake Agnes. The preferred typical section in Segment 4 is the 128.8 m (422.6 ft) rural interstate typical section requiring an additional 37.4 m (122.6 ft) of right-of-way. Centering on the existing alignment or widening to the left would require construction within the open water of both Lake Agnes and Little Lake Agnes. Any widening to the left would likely necessitate the construction of one or two bridges or would require the filling of a significant portion of the southern ends of these lakes (as much as 2.3 ha (5.6 ac) of open water surface area). Widening to the right in this area would impact two wetland systems associated with the contributing drainage basins for Lake Agnes and Little Lake Agnes. The wetland associated with Lake Agnes is large and forested and would require

mitigation. The non-forested wetland associated with Little Lake Agnes would have less costly mitigation requirements than the forested wetland. The wetland impacts for an alignment shift to the right are considered preferable to the potential impacts to the lakes and the costly construction and mitigation for a centered or left widening.

Segment 7 - Of the 3.9 km (2.4 mi) of Segment 7, approximately 2.6 km (1.6 mi) is bifurcated median with right-of-way expanding to a maximum of 117.7 m (386 ft). The recommended typical section in Segment 7 is the 128.8 m (422.6 ft) rural typical. By shifting the proposed construction to the left within the existing right-of-way, maintenance of traffic can utilize the existing westbound and eastbound lanes while the new westbound lanes are constructed. Eastbound traffic can then use the existing westbound lanes while the new eastbound lanes are being constructed. Once the new westbound and eastbound lanes are constructed, the existing roadways can be removed. This alignment shift withinthe existing right-of-way would eliminate the necessity of constructing over 2.6 km (1.6 mi) of two-lane temporary roadway for maintenance of traffic (at an additional cost estimated to be about $1.3 million).

3.4.4 Interchange Configurations

In Polk County, the I-4 PD&E study contains eight interchanges. All ofthe existing interchanges require modifications to conform to the recommended typical sections, provide for an acceptable LOS and meet current design and safety standards. The existing and proposed interchange configurations carry the I-4 mainline under the cross roads except at the US 98, Socrum Loop Road (CR 582) and SR 33 interchanges.

The proposed interchange concepts were evaluated, selected and approved by the FDOT and the FHWA during the master plan phase of this project for the following five locations: Memorial Boulevard, Kathleen Road (SR 539), SR 33, SR 559 and CR 557. No alternative interchange layout concepts are proposed in this PD&E study for these five locations.

Note: The Memorial Boulevard interchange concept in the 1994 I-4 Master Plan shows the Memorial Boulevard overpass on-ramp bridge being relocated to the inside of the existing structure. A more detailed analysis of the geometry required to tie into the existing I-4 design to the west of this project requires that the proposed overpass structure be relocated to the outside of the existing bridge. This change conforms to the intent of the 1994 I-4 Master Plan concept.

Alternate configurations were presented in the 1994 I-4 Master Plan for the Socrum Loop Road (CR 582) and US 27 (SR 25) interchanges. The selection of the preferred interchange configuration was deferred to the PD&E phase of this project after detailed evaluations of the environment and costs were conducted and public input was received.

Memorial Boulevard - The existing interchange provides an eastbound I-4 exit ramp and a westbound I-4 entrance ramp. An eastbound I-4 entrance ramp would be added in the conceptual interchange configuration. The proposed westbound ramp connection to I-4 would be relocated to the east of the existing ramp. The addition of an eastbound I-4 entrance ramp would require that additional limited access right-of-way be acquired in the southeast quadrant. The I-4 ramp termini would not be signalized The proposed ramps would provide access to the proposed general purpose lanes of I-4.

The relocated Galloway Road overpass west of Memorial Boulevard would provide connections to the frontage roads west of this project. The frontage roads terminate at North Galloway Road. The westbound auxiliary lane terminates at Memorial Boulevard.

This modified directional interchange concept will not include a ramp for the return move from westbound I-4 to eastbound Memorial Boulevard due to the marginal warrants as stated in the 1989 I-4 Master Plan. The projected 2010 design year traffic for this movement has a DHV of 90 with a LOS A, thereby making this option for the Memorial Boulevard interchange uneconomical. This fact was confirmed during the 1994 I-4 Master Plan 2020 traffic modeling process when the addition of this ramp caused a reassignment of only a small number of vehicles. A schematic of the interchange configuration proposed for Memorial Boulevard is shown in Figure 3-1, page 3-16.

Kathleen Road (SR 539) - The existing diamond would be modified to a tight diamond urban type interchange. The limited access right-of-way would be extended north and south along Kathleen Road. The I-4 ramp intersections with Kathleen Road would be signalized. The proposed improved ramps would provide access to the proposed general purpose lanes of I-4. The extension of the limited access right-of-way south along Kathleen Road will require the closing of the West Margaret Street and West Elliott Street intersections. Access to the residences onthese two streets would be provided by opening access connections from Bella Vista Street. The proposed access roads are shown on the concept plans. A schematic of the interchange configuration proposed for Kathleen Road is shown in Figure 3-2, page 3-17.

US 98 (SR 35 & 700) - The 1994 I-4 Master Plan recommended (and the FHWA approved) an urban compressed diamond type interchange be used at US 98 (similar to the existing interchange except that the ramp terminals would be pulled in tighter to the I-4 mainline). The preliminary engineering consultant for Segment 8 has recommended a single-point urban diamond type interchange at this location because the distance between ramp terminals did not provide sufficient storage lengths for the left turning movements and degraded the LOS to an unacceptable level. The single-point urban diamond conforms to the intent of the master plan recommendation for an urban type interchange. The compressed diamond type interchange alternative at US 98 is shown in Figure 3-3, page 3-18. A schematic of the recommended single-point diamond urban interchange configuration proposed for US 98 is shown in Figure 3-4, page 3-19.

US 98 north of I-4 is currently under design to expand the existing four-lane roadway to six lanes with auxiliary lanes. US 98 south of I-4 is proposed to be expanded from four to six lanes. The proposed single-point diamond interchange is consistent with the proposed improvements to US 98. The I-4 ramp intersections with US 98 would be signalized. The proposed improved ramps would provide access to the proposed general purpose lanes of I-4.

The 1994 I-4 Master Plan showed limited access right-of-way extended along US 98 north to Crevasse Street and south to Pyramid Parkway with Robson Street realigned. This limited access extension was a result of the exclusive northbound and southbound right turn lanes proposed for US 98 at the I-4 interchange. A LOS analysis was performed for US 98 through the interchange without the right turn lanes. The analysis showed that the LOS would not be degraded if the right turn lanes were eliminated. This then allowed the limited access limits to be set at the intersectionsof the proposed US 98 rights-of-way with the I-4 right-of-way lines. The limited access right-of-way would not be extended along US

98 northward and southward beyond the intersections of the proposed US 98 and I-4 mainline rights-of-way thus maintaining access from US 98 to the adjacent businesses and eliminating the need for back access roads and the purchase of limited access rights.

Socrum Loop Road (CR 582) - Two interchange configurations were evaluated during the master plan phase of this project (OCR-1 and SLR-3). Five additional interchange configurations were evaluated during the PD&E phase. The existing interchange is a modified diamond that connects I-4 to two different side roads (SR 33 and CR 582). The existing interchange geometry could not accommodate the modification of the existing ramps using current standards because the proposed ultimate typical section situates the general purpose lanes closer to the existing right-of-way. All of the CR 582 interchange alternatives include replacing the I-4 bridges over CR 582 to accommodatethe ultimate ten-lane typical section on I-4 and the ultimate six-lane typical section on CR 582 and SR33. The proposed ramps in all the alternative configurations would provide access to the proposed general purpose lanes of I-4.

Two of the interchange concepts would move the interchange from the area of the CR 582 underpass to the Old Combee Road overpass. These concepts have been designated as OCR-1 and OCR-2 (Old Combee Road 1 and 2).

Alternate 1 (OCR-1) is an urban diamond type interchange requiring additional limited access right-of-way in all four quadrants to accommodate the ramps. This alternative is shown in the 1994 I-4 Master Plan as "Socrum Loop Road - Alternative 2". This configuration would impact the Paddock Club Apartment complex and FGT gas pipeline in the northwest quadrant and the Lakeland RV Resort and mobile home park in the southeast quadrant. This concept would require that both CR 582 and SR 33 be improved to six lanes from the CR 582/SR 33 intersection to Old Combee Road and that Old Combee Road be improved to at least four lanes from SR 33 to CR 582. A schematic of interchange alternative OCR-1 is shown in Figure 3-5, page 3-20.

Alternate 2 (OCR-2) is a full service partial cloverleaf with ramp loops in the northeast and southwest quadrants. Most of the right-of-way acquisition for this interchange concept would be currently vacant land. This concept would require that both CR 582 and SR 33 be improved to six lanes from the CR 582/SR 33 intersection to Old Combee Road and that Old Combee Road be improved to at least four lanes from SR 33 to CR 582. A schematic of interchange alternative OCR-2 is shown in Figure 3-6, page 3-21.

Three of the interchange alternatives would propose to reconfigure the interchange in its approximate existing location. These concepts have been designated as SLR-3, SLR-4 and SLR-5 (Socrum Loop Road 3, 4 and 5).

Alternate 3 (SLR-3) is shown in the 1994 I-4 Master Plan as "Socrum Loop (CR 582) - Alternate 1". SLR-3 is a full service split diamond interchange with loop ramps connecting I-4 with CR 582 to the north and SR 33 to the south. This configuration would move the south ramps connecting to SR 33 further east utilizing the existing eastbound rest area right-of-way and aligning the ramp termini with the entrance drive to the housing development south of SR 33. The loop ramps connecting to CR 582 would utilize the vacant land between the Holiday Inn and the Paddock Club Apartments, but would impact both of those properties. An additional westbound I-4 on-ramp would be provided in the northwest quadrant

of the CR 582 underpass, encroaching on the Cracker Barrel restaurant property. A schematic of interchange alternative SLR-3 is shown in Figure 3-7, page 3-22.

Alternate 4 (SLR-4) is very similar to SLR-3 except that the north loop ramps connecting I-4 to CR582 would require the use of virtually all of the Holiday Inn propertyand isolate the Lake Gibson Church of Christ within the "infield area" of the interchange. The westbound I-4 off-ramp would be aligned with the existing intersection of CR 582 and Ferney Drive. A schematic of interchange alternative SLR-4 is shown in Figure 3-8, page 3-23.

Alternate 5 (SLR-5) would have the same I-4 eastbound on- and off-ramp configuration as SLR-3 and SLR-4. The I-4 westbound on- and off-ramps would be moved to the northwest quadrant of the CR 582 underpass. This configuration would impact the Cracker Barrel development and require improvement of Arteva Drive to connect the I-4 ramps to CR 582. A schematic of interchange alternative SLR-5 is shown in Figure 3-9, page 3-24.

The five interchange configurations at CR 582 and Old Combee Road described above were presented to representatives of the City of Lakeland, and the TPO in January 1994 to solicit local government input

Two of the interchange alternatives (OCR-1 and OCR-2) would move the interchange from the intersection of CR 582 and SR 33 to Old Combee Road, about 1.1 km (0.7 mi) east of the existing interchange. Because of sight distances, touchdown lengths and increased traffic loading, both of these alternatives would require that Old Combee Road be improved from two lanes to at least a four-lane divided highway from SR 33 to CR 582, a distance of about 1.0 km (0.6 mi), SR 33 be improved to a six-lane roadway from CR 582 to Old Combee Road, a distance of about 1.8 km (1.1 mi) and CR 582 be improved to a six-lane roadway from SR 33 to Old Combee Road, a distance of about 1.6 km (1.0 mi). The City and the TPO expressed concerns regarding several issues related to moving the interchange to the Old Combee Road location: 1) compatibility with future land use in the area of the interchange, 2) compatibility with the Bridgewater Development of Regional Impact (now approved), 3) compatibility with the local road network, and 4) proximity to existing and planned development in the area of the existing interchange.

The City of Lakeland also expressed concerns regarding the proposed interchange configurations at the existing location (SLR-3, SLR-4 and SLR-5). The City preferred that encroachment into the Cracker Barrel Restaurant, Holiday Inn and Paddock Club Apartment properties be minimized or avoided and that access to the Lake Gibson Church of Christ, the Chevron Gas Station and the private properties along the north side of Socrum Loop Road between Arteva Drive and Ferney Drive be maintained or provided. All of the interchange concepts at the Socrum Loop location (SLR-3, SLR-4, SLR-5, NCR-6 and SLR-7) would require that CR 582 and SR 33 be improved to six lanes from the intersection of CR 582/SR 33 to about 0.4 km (0.25 mi) east of the I-4 ramp terminals.

Alternate 6 - A sixth interchange configuration NCR-6 (New Connector Road 6) was developed as a result of the input received from the City of Lakeland and the TPO. NCR-6 is a tight urban diamond type interchange with a new connector road from CR 582 and SR 33 located just east of the existing ramps, between the Holiday Inn and Paddock Club Apartment properties. This configuration would avoid impacts to the Cracker Barrel development, minimize impacts to the Holiday Inn property and maintain access to the church, gas station and residences. NCR-6 would take advantage of the existing eastbound

rest area right-of-way and would not require the rebuilding of Old Combee Road. NCR-6 would require the taking of two of the Paddock Club apartment buildings and the relocation of the GTE facility south of I-4. NCR-6 would also require that the I-4 mainline alignment shift to the right (south). A traffic operations analysis of Alternate NCR-6, showed that an unacceptable LOS would result because of the short distances between the intersection of the I-4 eastbound off- and on-ramps with the New Connector Road and SR 33. A schematic of interchange alternative NCR-6 is shown in Figure 3-10, page 3-25.

Alternate 7 (SLR-7) was developed and selected as the alternative which best complies with the desires of local government, minimizes impacts and provides acceptable traffic operations. Alternate SLR-7 would be compatible with future land use (including the Bridgewater DRI) and the local road network and is proximate to the existing development in the area of the interchange. This alternate minimizes impacts to the Holiday Inn and Paddock Club Apartment properties, avoids the taking of the GTE switching facility and the FGT pipeline. In order to provide an acceptable LOS at the intersection of CR 582 and SR 33, both of these roadways would be improved to six lanes through the area of the interchange. Access to the development in the northwest quadrant of the interchange (Cracker Barrel) will be improved by the addition of a City of Lakeland street located between Arteva Drive and Ferney Drive. (This street is shown dashed on the Concept Plans and labeled "By Others". It is anticipated that a traffic signal may be required at the intersection of this new street and CR 582. Traffic signal warrants will be determined at such time as the traffic operations degrade to an unacceptable level. Access from Arteva Drive to CR 582 would be closed due to the short distance between the Arteva Drive and SR 33 intersections. A schematic of interchange alternative SLR-7 is shown in Figure 3-11, page 3-26.

Only major utility relocations were evaluated in this comparison. A FGT pipeline runs along the north I-4 right-of-way from east of Old Combee Road to west of the Paddock Club Apartments where it turns north to Socrum Loop Road (CR 582). The pipeline follows Socrum Loop Road southwest to the I-4 right-of-way where it turns west and runs along the north right-of-way of I-4 to US 98. The estimated relocation cost for the FGT pipeline is about $562,500 per km ($900,000 per mile). A GTE switching facility is located south of I-4 and west of the existing I-4 eastbound off-ramp. The estimated cost to relocate the GTE facility is about $1,290,000.

American Telecasting maintains a microwave tower adjacent to the north I-4 right-of-way between the Holiday Inn and the Paddock Club Apartments. The cost to relocate the tower is about $121,500.

Alternate 7 (SLR-7) was selected as the preferred alternative configuration for the CR 582 Socrum Loop Road interchange. The total estimated costs and impacts for Segment 3 are shown in Figure 3-21, page 3-37, in Section 3.5 of this report.

<u>SR 33</u> - The existing diamond would be modified to a tight diamond urban type interchange. The limited access right-of-way would be extended north and south along SR 33. The I-4 ramp intersections with SR 33 would be signalized. The proposed improved ramps would provide access to the proposed general purpose lanes of I-4. A schematic of the interchange configuration proposed for SR 33 is shown in Figure 3-12, page 3-27.

<u>SR 559</u> - The existing diamond interchange would be modified to a tight diamond urban type interchange. The existing frontage road intersection in the southeast quadrant would be relocated to the south and the limited access right-of-way would be extended south to the relocated frontage road. The

I-4 ramp intersections with SR 559 would be signalized. The proposed improved ramps would provide access to the proposed general purpose lanes of I-4. A schematic of the interchange configuration proposed for SR 559 is shown in Figure 3-13, page 3-28.

CR 557 - The existing interchange is a full service partial cloverleaf with ramp loops in the northwest and southeast quadrants. The proposed conceptual layout for this interchange is a full service rural diamond type interchange eliminating the existing ramp loops. The improved ramps would provide access to the proposed general purpose lanes of I-4. Additional limited access right-of-way would be required in the northeast and southwest quadrants to accommodate the proposed ramps. The I-4 ramp intersections with CR 557 would be signalized. A schematic of the interchange configuration proposed for CR 557 is shown in Figure 3-14, page 3-29.

US 27 - The existing interchange is a full service partial cloverleaf with ramp loopsin the northwest and southeast quadrants. Existing frontage roads are located in the northwest and southwest quadrants. Two alternative interchange concepts were presented in the 1994 I-4 Master Plan.

Alternate 1 (US27-1) is a full service three-level modified diamond interchange. Level 1 would be I-4 at grade. Level 2 would be the US 27 southbound overpass and Level 3 would be the US 27 northbound overpass. The I-4 exit and entrance ramps would split to intersect both the US 27 northbound and southbound levels. The proposed ramps would provide access to the proposed general purpose lanes of I-4. The existing frontage roads would be relocated to the north and south, respectively. This configuration would not require ramps or loops in the northeast or southwest quadrants, but would require the limited access right-of-way be extended north and south along US 27 in those quadrants. A schematic of interchange concept US27-1 is shown in Figure 3-15, page 3-30.

Alternate 2 (US27-2) is a full service four-level directional interchange. Level 1 would be the I-4 mainline at approximately the same grade as the existing I-4. Level 2 is the US 27 overpass which is proposed to remain at the approximate level of existing ground. Level 3 would carry US 27 southbound to I-4 east and westbound and US 27 northbound to I-4 east and westbound. Level 4 would consist of directional elevated ramps connecting I-4 eastbound to US 27 north and southbound and I-4 westbound to US 27 north and southbound. These ramps would continue to provide access to the proposed general purpose lanes of I-4. The alignment and terminus of the frontage road in the northwest quadrant would be relocated to the north and the alignment of the frontage road in the southwest quadrant would be shifted to the south. This concept would require additional right-of-way in the northeast and southwest quadrants. Since the northbound and southbound exit ramps touchdown between the US 27 travel lanes, the limited access right-of-way would not have to be extended along the existing US 27 right-of-way. A schematic of interchange alternate US27-2 is shown in Figure 3-16, page 3-31.

Alternate 3 (US27-3) was developed during the PD&E phase to see if the multi-level concepts could be reduced to a two-level design. US27-3 is a full service two-level partial cloverleaf concept (semi-directional with loops). Level 1 would be I-4 at approximately existing grade. Level2 would be the US 27 overpass and the I-4 flyover entrance ramps. The US27-3 alternate would provide loop ramps in the northwest and southeast quadrants for the I-4 westbound and eastbound exit ramps, respectively. These loops would be similar to the existing loop ramps, but redesigned to current standards and moved outward to accommodate the I-4 and US 27 improvements. Flyover ramps for the I-4 westbound and eastbound entrance ramps would be provided east and west, respectively, of the existing US27 overpass.

This concept would require additional right-of-way in all four quadrants but would not require the extension of the limited access right-of-way along US 27 in the northeast and southwest quadrants. A schematic of interchange alternate US27-3 is shown in Figure 3-17, page 3-32.

An evaluation of the three interchange alternatives described above for US 27 was documented in Technical Memorandum, INTERCHANGE ALTERNATIVES ANALYSIS, Interstate 4 at US 27, August 1995 (US 27 Tech Memo), prepared as a separate document. This analysis showed that the total estimated cost for each alternative (including comparative construction, right-of-way and other costs) was essentially the same. Construction and other costs are higher for Alternate 2 (primarily due to the higher and longer structures), but right-of-way costs are higher for Alternates 1 and 3 (primarily due to the extension of limited access). The estimated construction costs range from about $50,500,000 for Alternates 1 and 3 to about $63,160,000 for Alternate 2. The total estimated cost differential between the alternatives with the lowest and highest cost is less than one percent. Therefore, the selection of interchange configuration was based on the potential effects on the surrounding community and a comparison of traffic flow characteristics of the three alternates.

Alternate 2 would impact seventeen (17) parcels of land and require two (2) business relocations for an estimated right-of-way cost of about $7,780,000 (including relocations and business damages). Alternates 1 and 3 would impact fifty-nine (59) parcels and require twelve (12) business relocations due to either the acquisition of land or the extension of limited access rights for an estimated right-of-way cost of about $22,120,000 (including relocations and business damages).

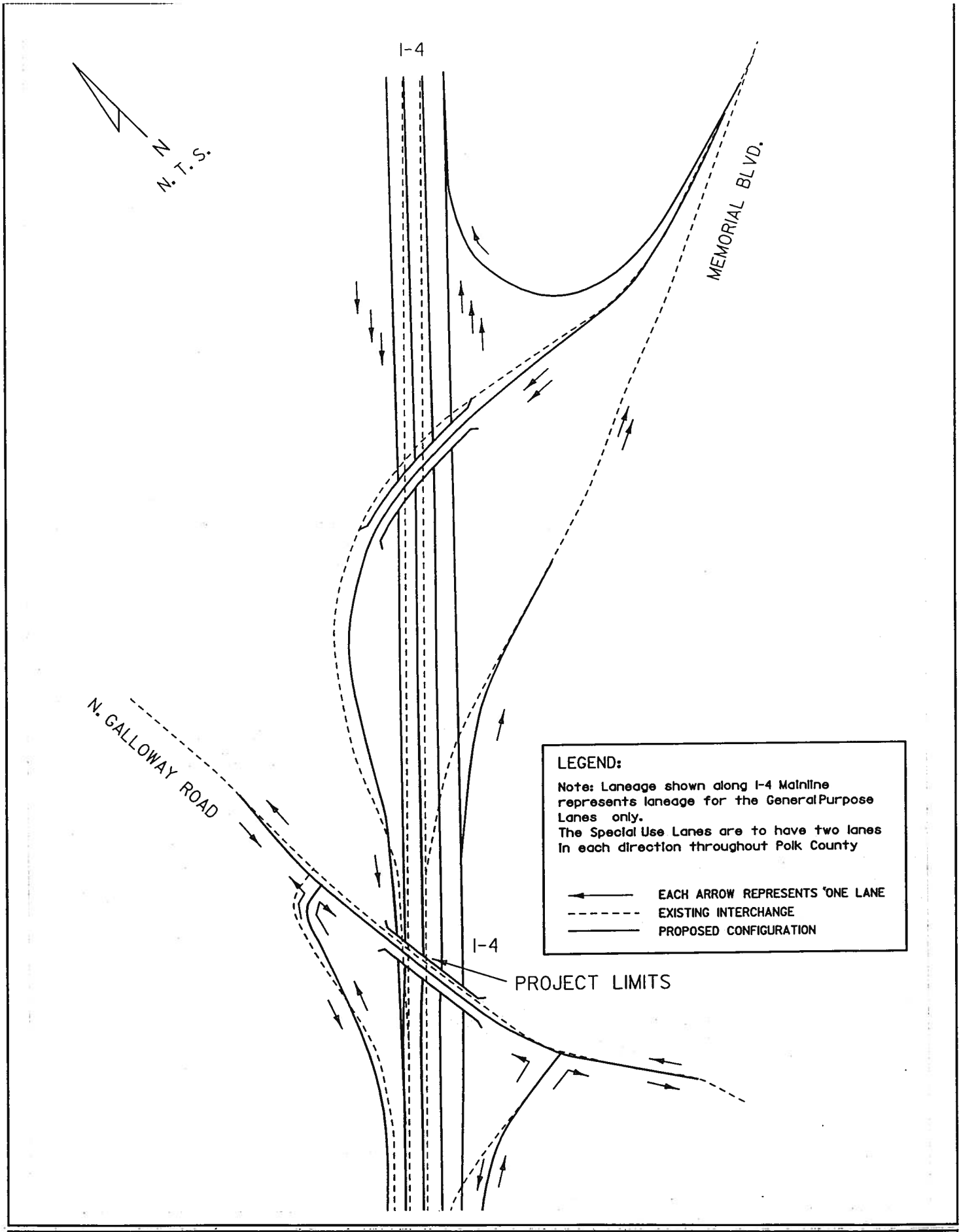
The traffic flow comparison showed that Alternate 2 would provide a higher quality of traffic flow for through trips than either Alternates 1 or 3 and would serve equally well as Alternate 1 and better than Alternate 3 for stopping trips. From an overall standpoint, Alternate 2 would operate more efficiently than Alternates 1 or 3. The results of the traffic flow characteristics analysis of the US 27 interchange configuration alternatives 1, 2 and 3 are tabulated in the August 1995 US 27 Tech Memo. As a result of the comparative analysis of US 27 interchange alternatives US27-1, US27-2 and US27-3, alternate configuration US27-2, the four-level directional interchange was recommended in the August 1995 US 27 Tech Memo.

Alternate 4 (US27-4) was subsequently developed because of the significant community impacts resulting from the extension of the limited access right-of-way associated with alternatives US27-1, US27-2 and US27-3 and the structure construction costs associated with the multi-level concepts. US27-4 is an expansion of the existing partial cloverleaf interchange configuration. The ramps in the northwest and southeast quadrants would be expanded outward requiring the acquisition of about 32.5 ha (80.3 ac) of additional right-of-way in the northwest and southeast quadrants at a cost of about$17,360,000. This right-of-way acquisition would result in four business relocations. This configuration would not restrict business access along US 27 in the northeast and southwest quadrants of the interchange.

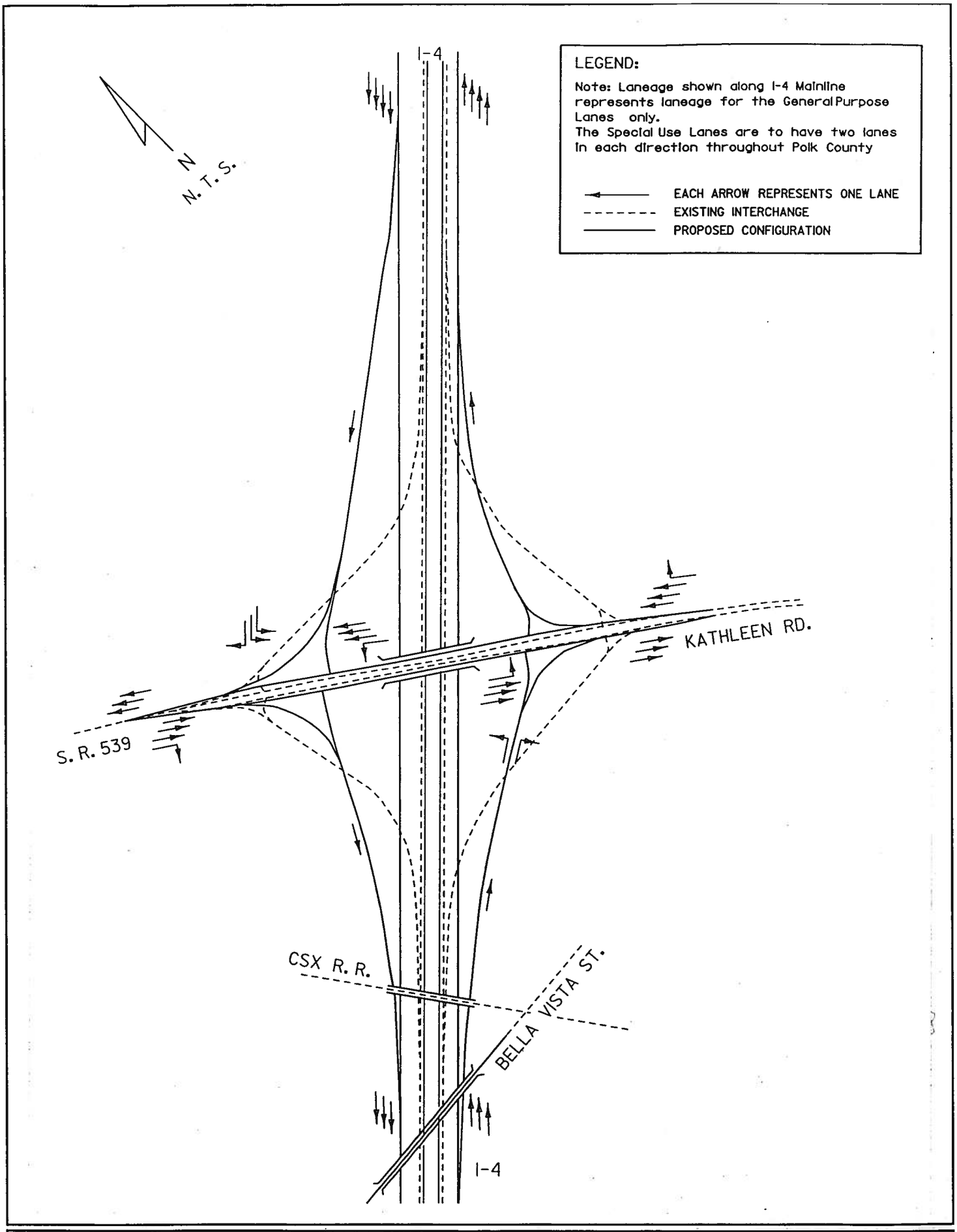
The ramp terminals would be moved north and south, respectively, of their existing locations. The south ramp terminal would be aligned with the relocated frontage road intersection with US 27. The limited access right-of-way would be extended in the southeast quadrant to Home Run Boulevard and in the northwest quadrant to a point north of the taper for the US 27 southbound to I-4 westbound entrance ramp. The limited access right-of-way in the northeast and southwest quadrants would not be extended along US 27 northward and southward, respectively, beyond the intersections of the US 27 and I-4

mainline rights-of-way thus maintaining access from US 27 to the adjacent businesses and eliminating the need for back access roads and the purchase of limited access rights. A schematic of US27-4 is shown in Figure 3-18, page 3-33.

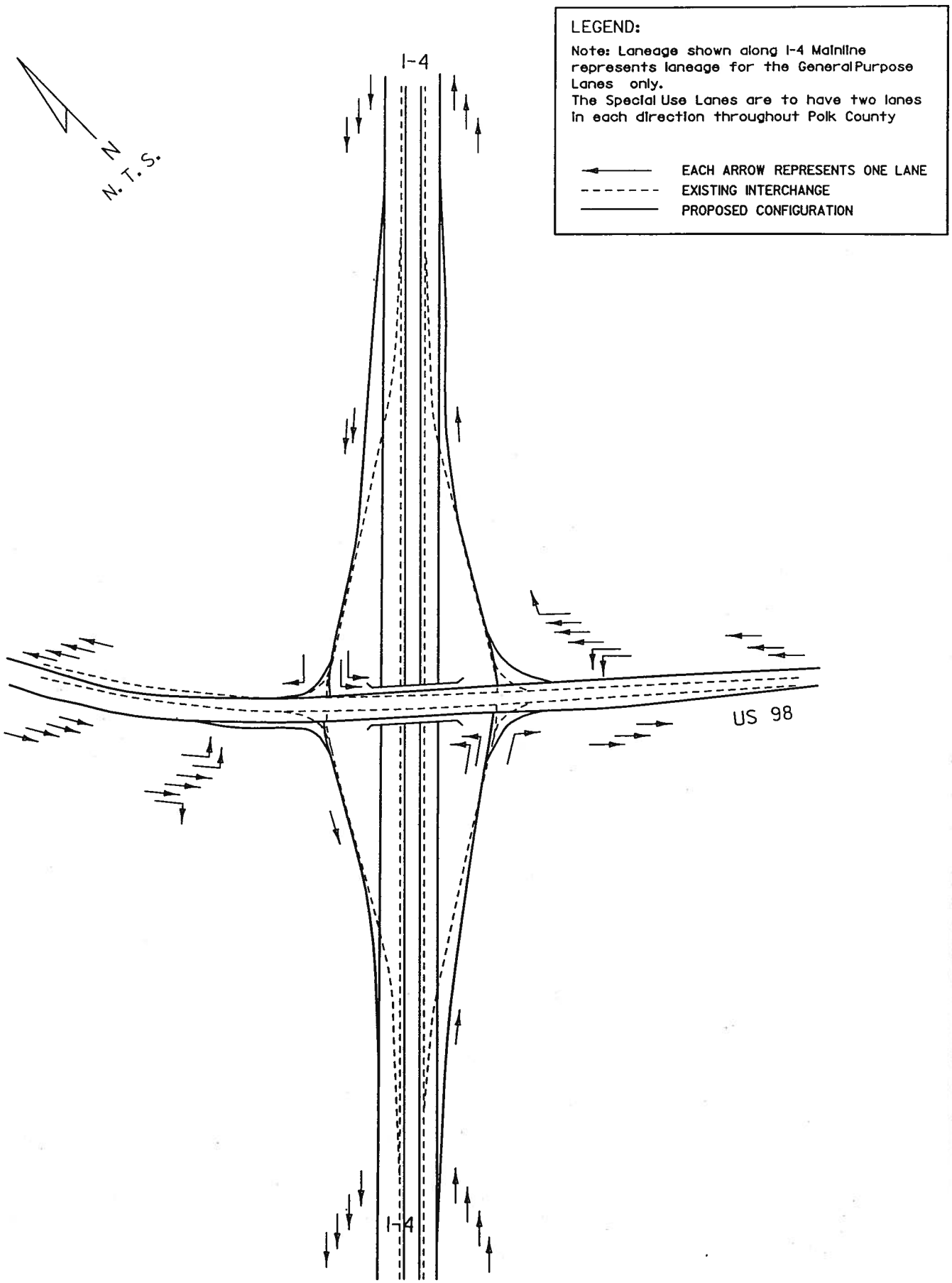
Alternate 4 (US27-4) was selected as the preferred alternative configuration for the US 27 interchange. The impacts and comparative costs for the interchange configuration alternatives evaluated for the US 27 interchange are shown in the alternatives evaluation matrix in Figure 3-27, page 3-43 in Section 3.5 of this report. The actual estimated total costs and impacts for Segment 9 (including the recommended US 27 interchange configuration) are shown in Figure 3-25, page 3-41 in Section 3.5 of this report.



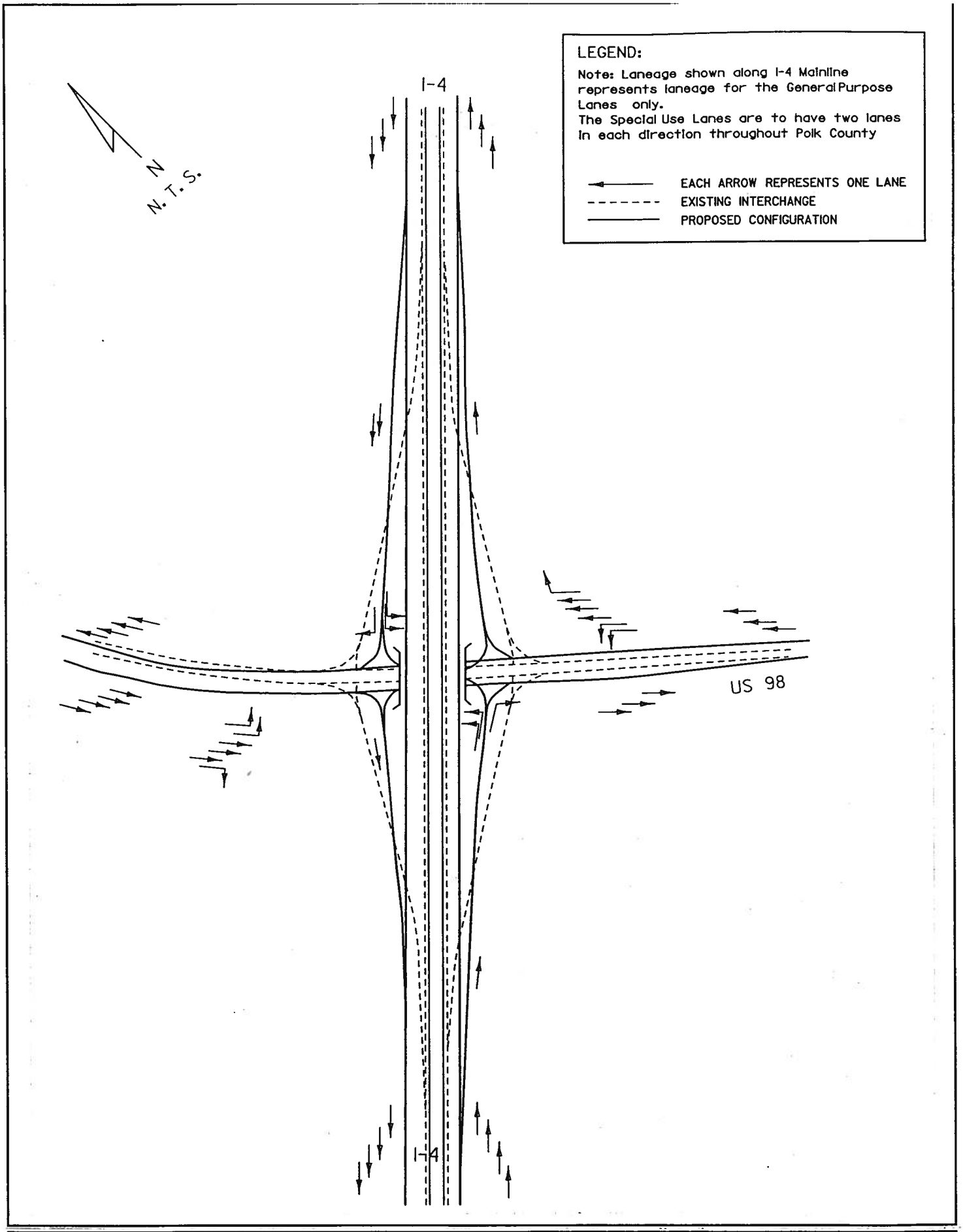
SCHEMATIC DIAGRAM OF MEMORIAL BOULEVARD INTERCHANGE CONCEPT	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-1



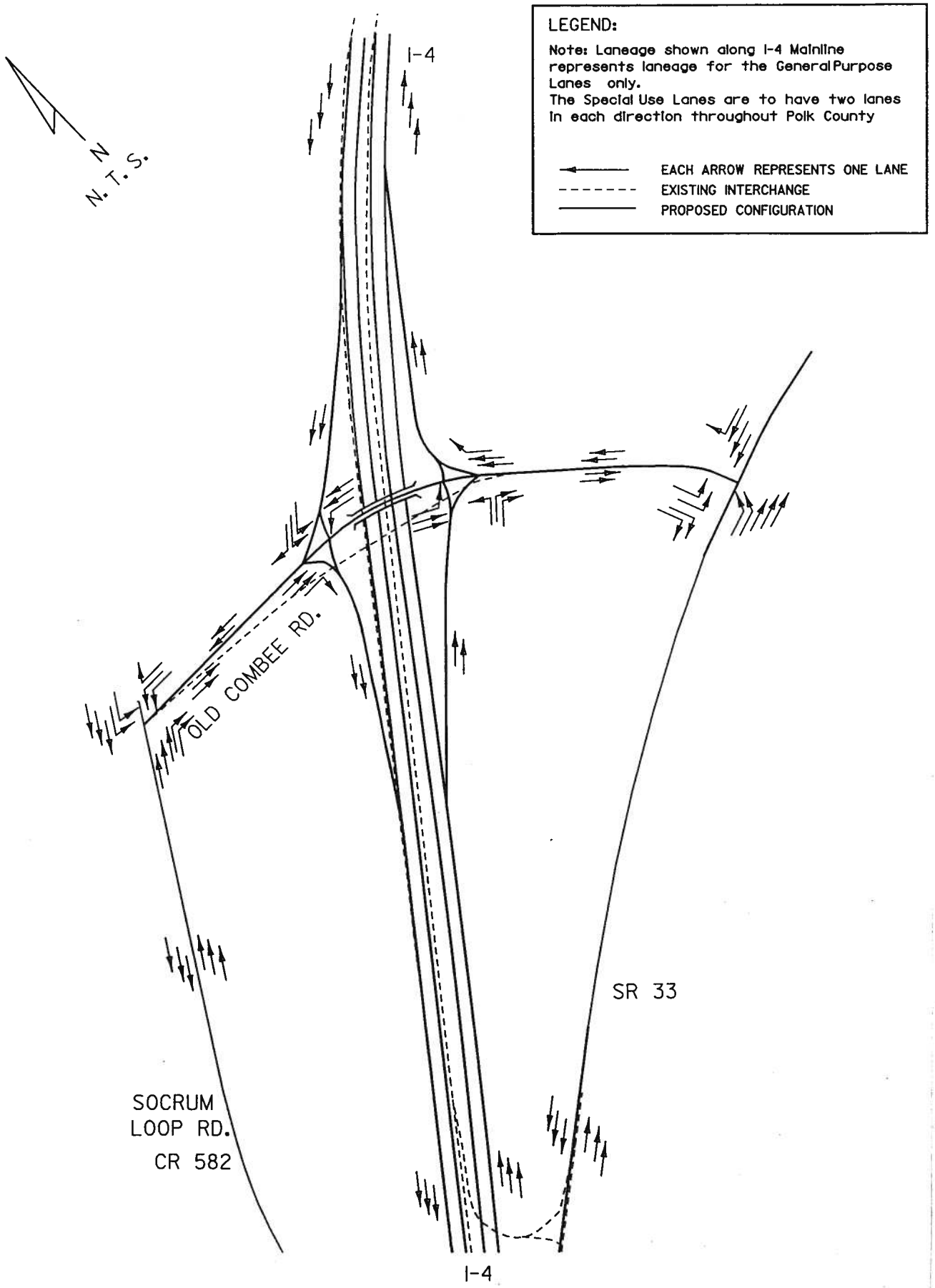
SCHEMATIC DIAGRAM OF KATHLEEN ROAD INTERCHANGE CONCEPT	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-2



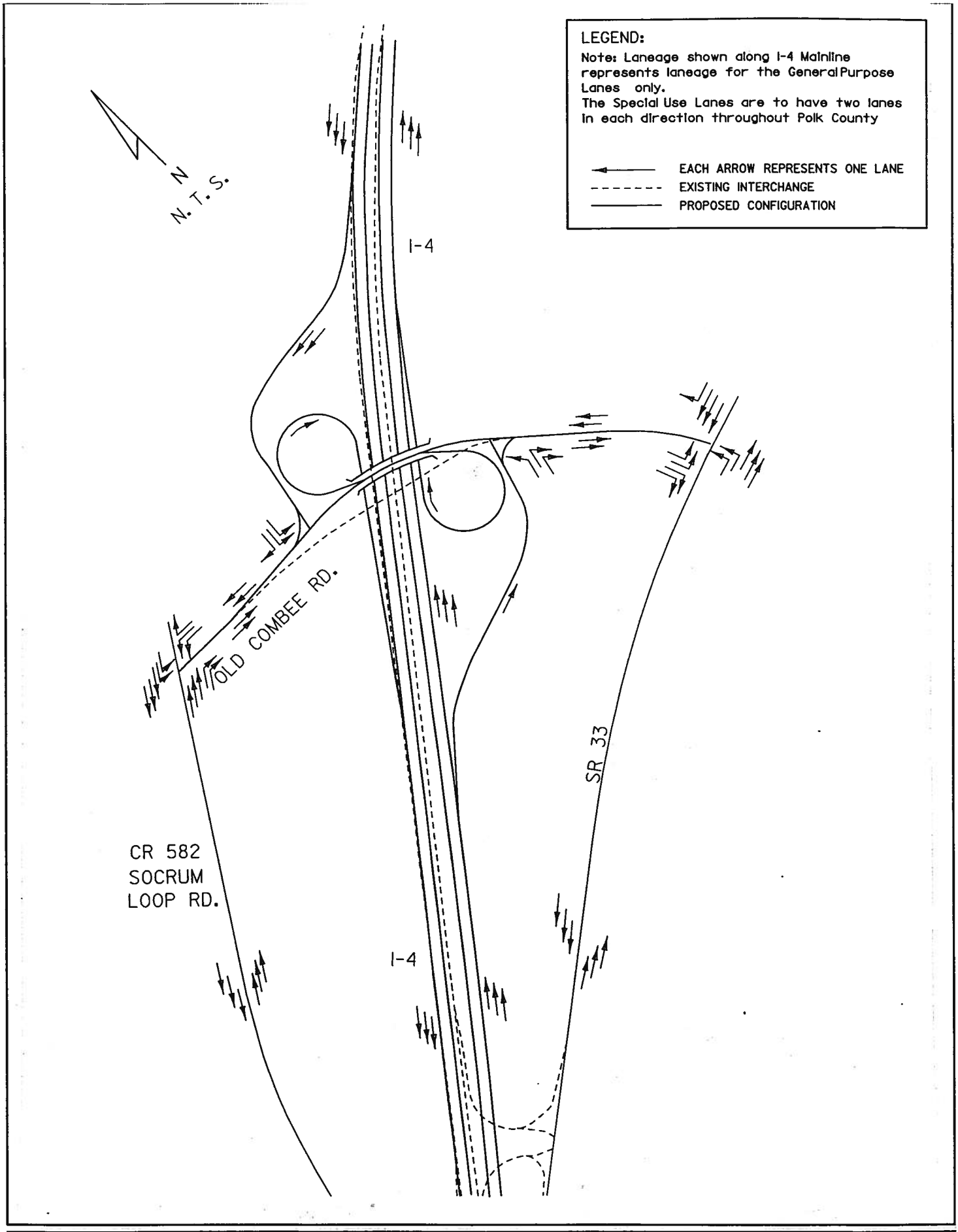
SCHEMATIC DIAGRAM OF US 98 INTERCHANGE CONCEPT (US98-1)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-3



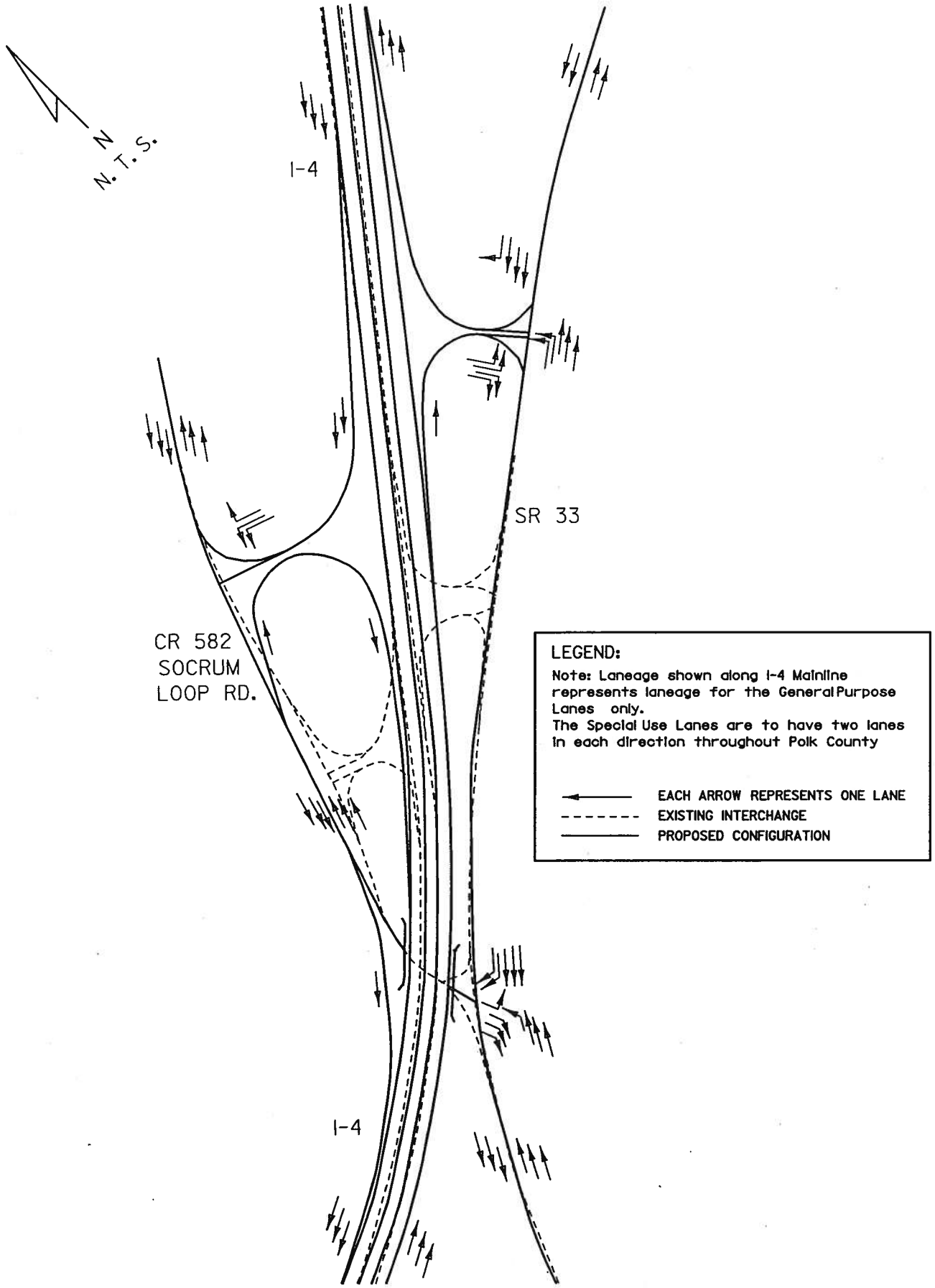
SCHEMATIC DIAGRAM OF US 98 INTERCHANGE CONCEPT (US98-1)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-4



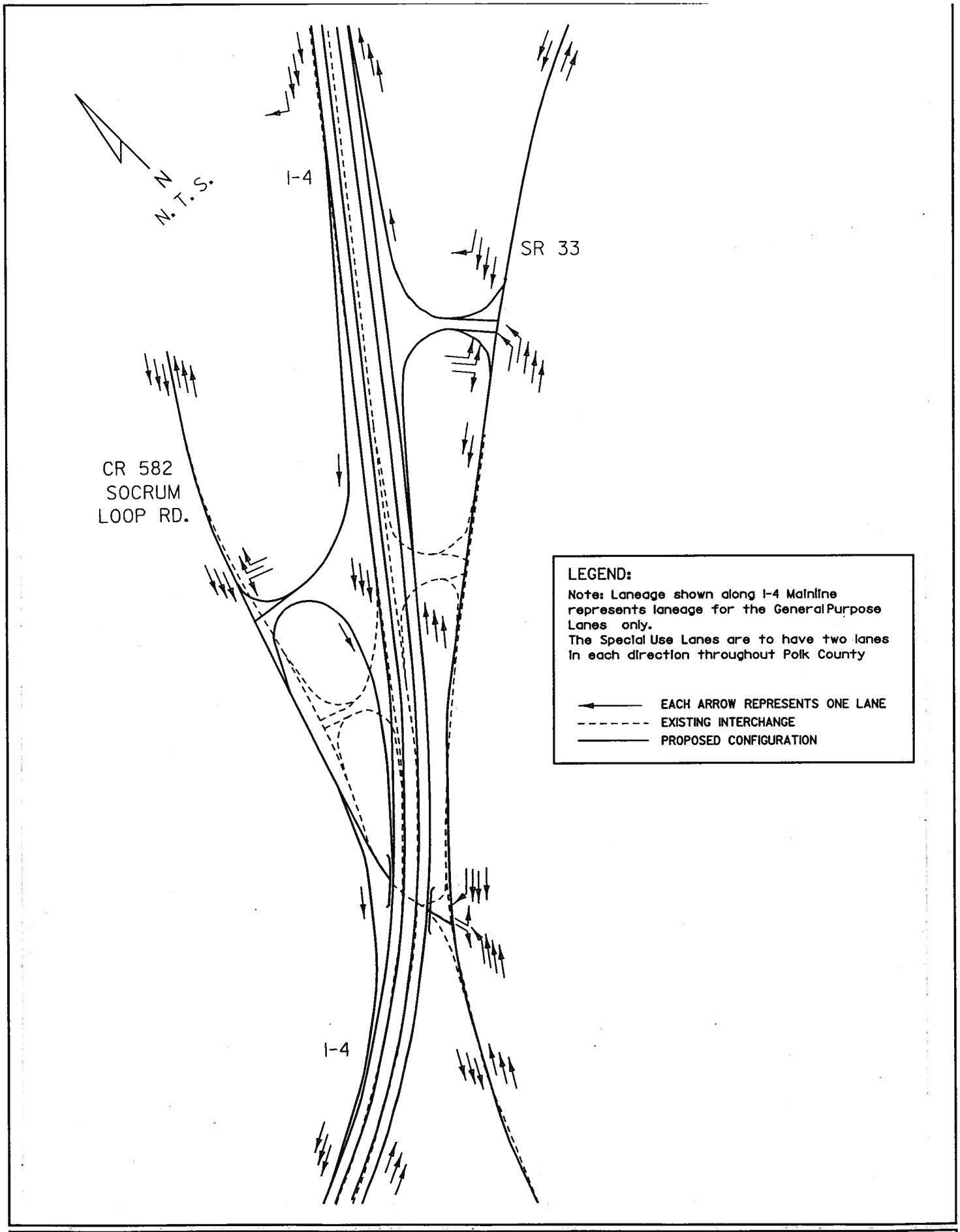
SCHEMATIC DIAGRAM OF CR 582 INTERCHANGE CONCEPT (OCR-1)	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 3-5



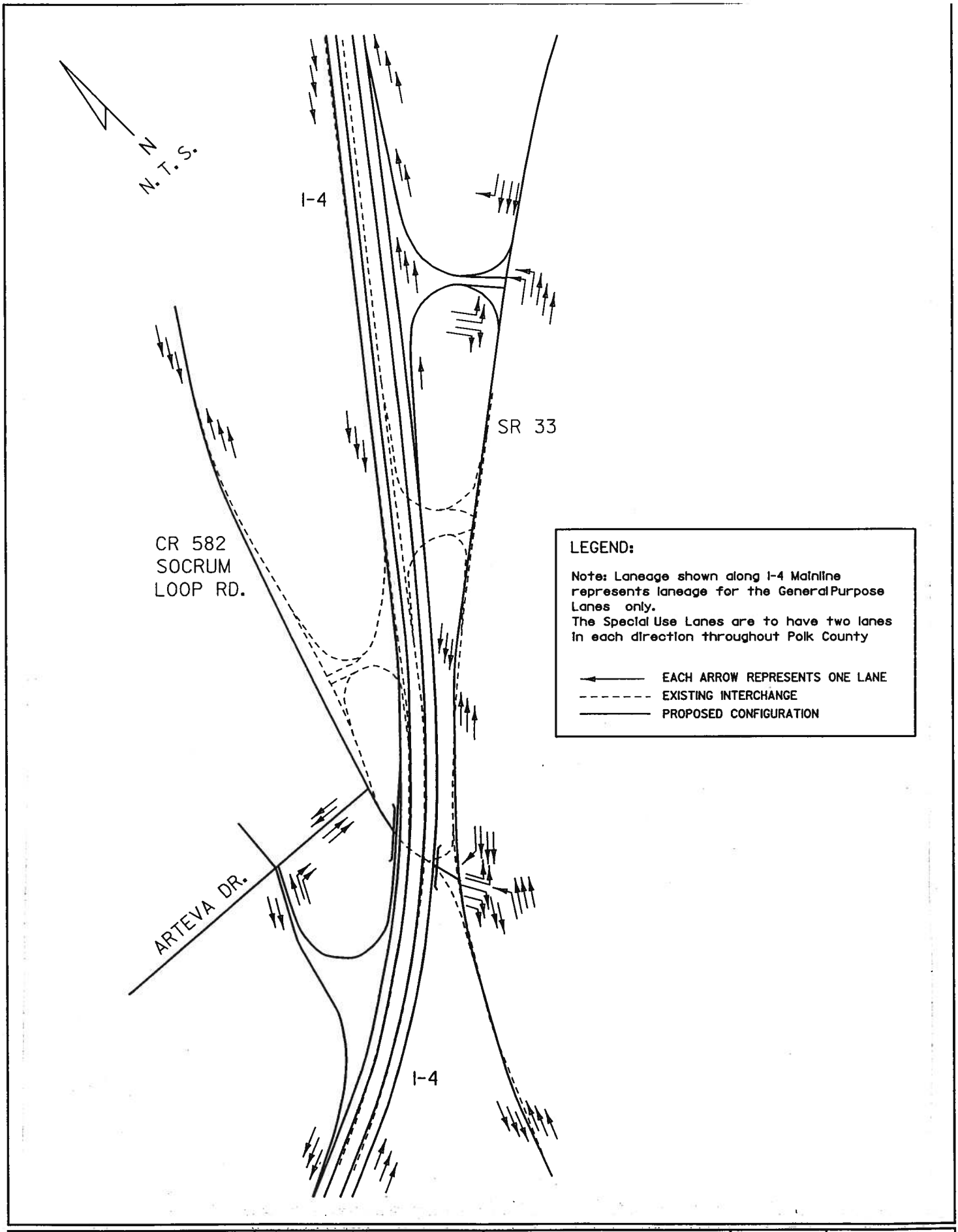
SCHEMATIC DIAGRAM OF CR 582 INTERCHANGE CONCEPT (OCR-2)	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 3-6



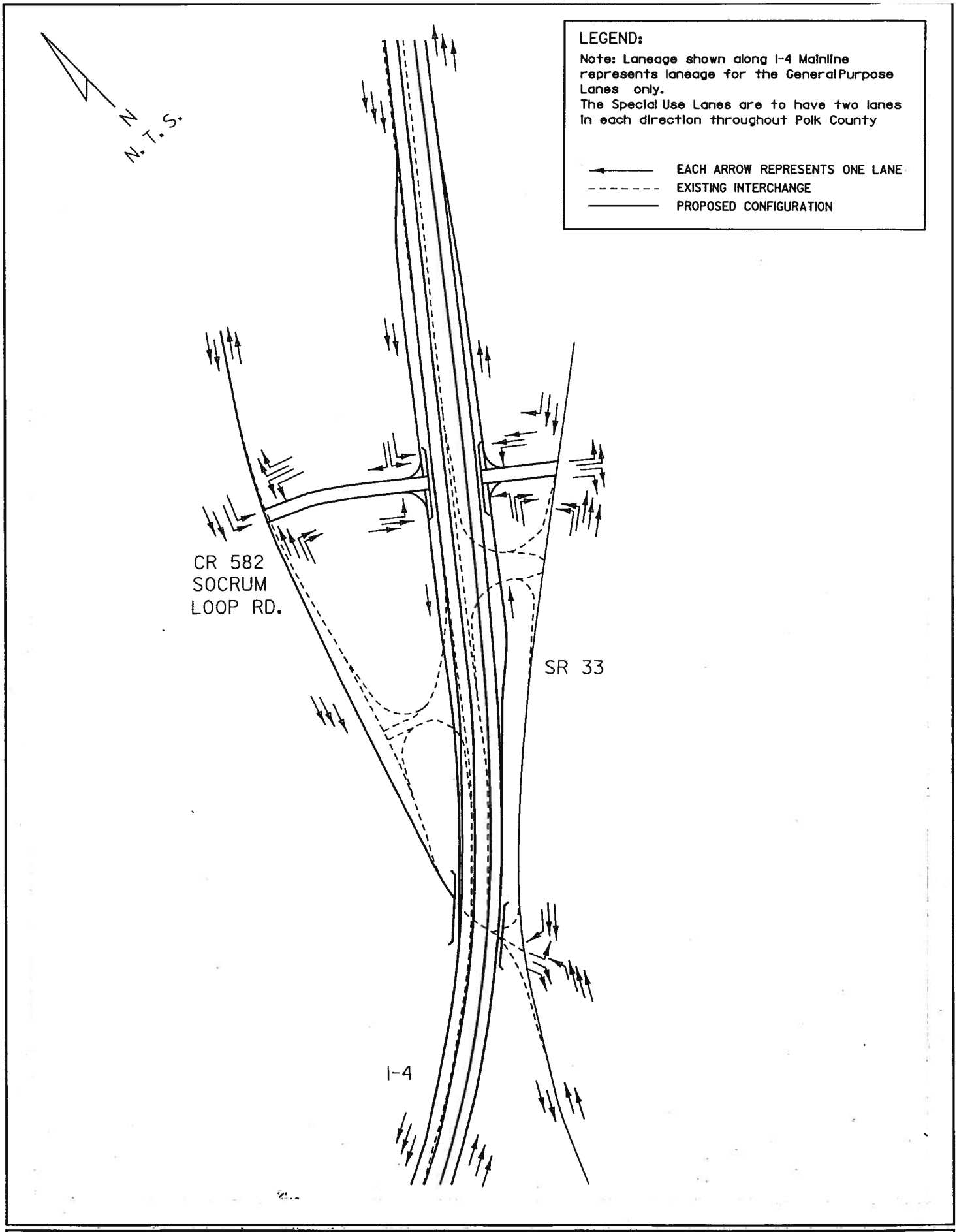
SCHEMATIC DIAGRAM OF CR 582 INTERCHANGE CONCEPT (SLR-3)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-7



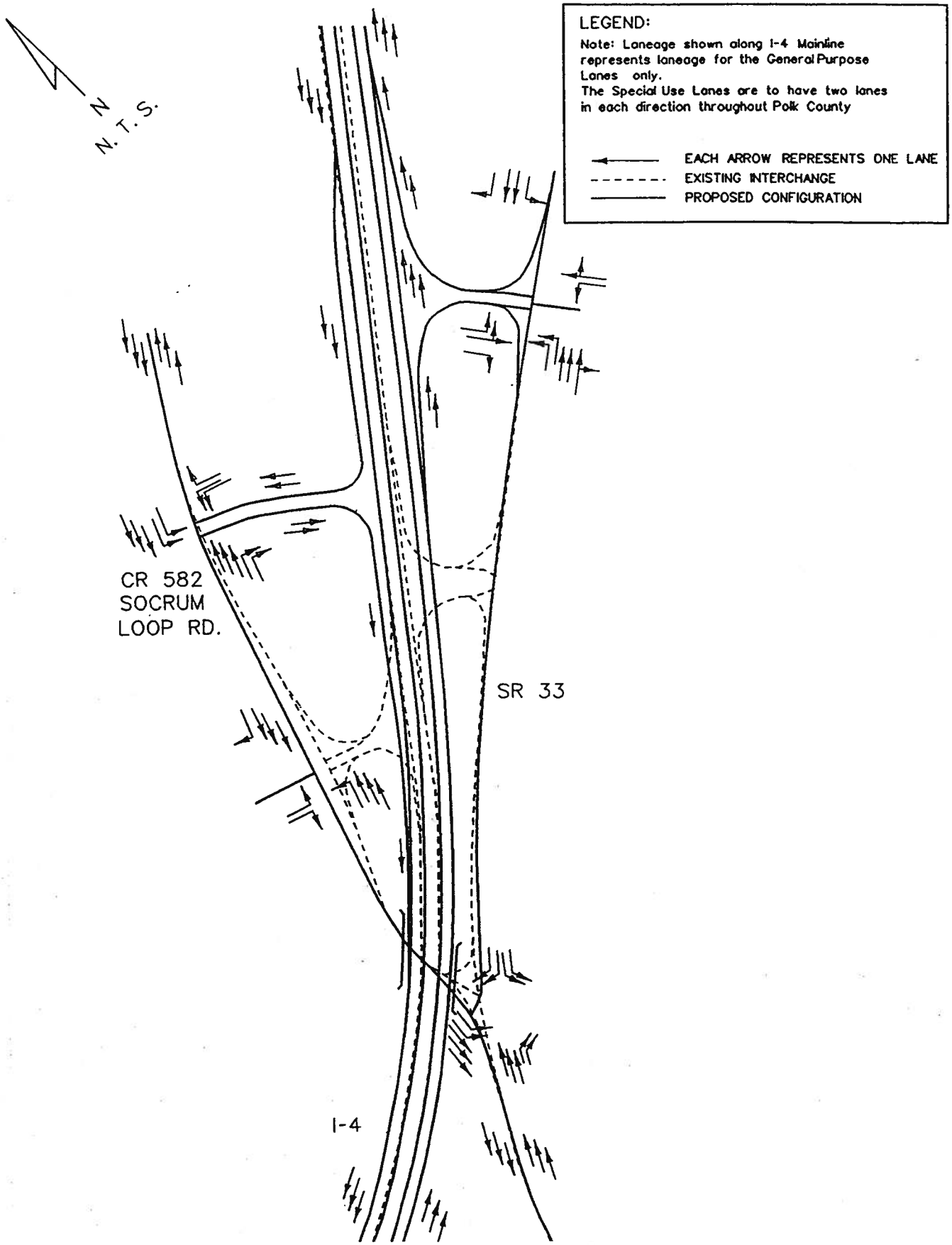
SCHEMATIC DIAGRAM OF CR 582 INTERCHANGE CONCEPT (SLR-4)	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 3-8



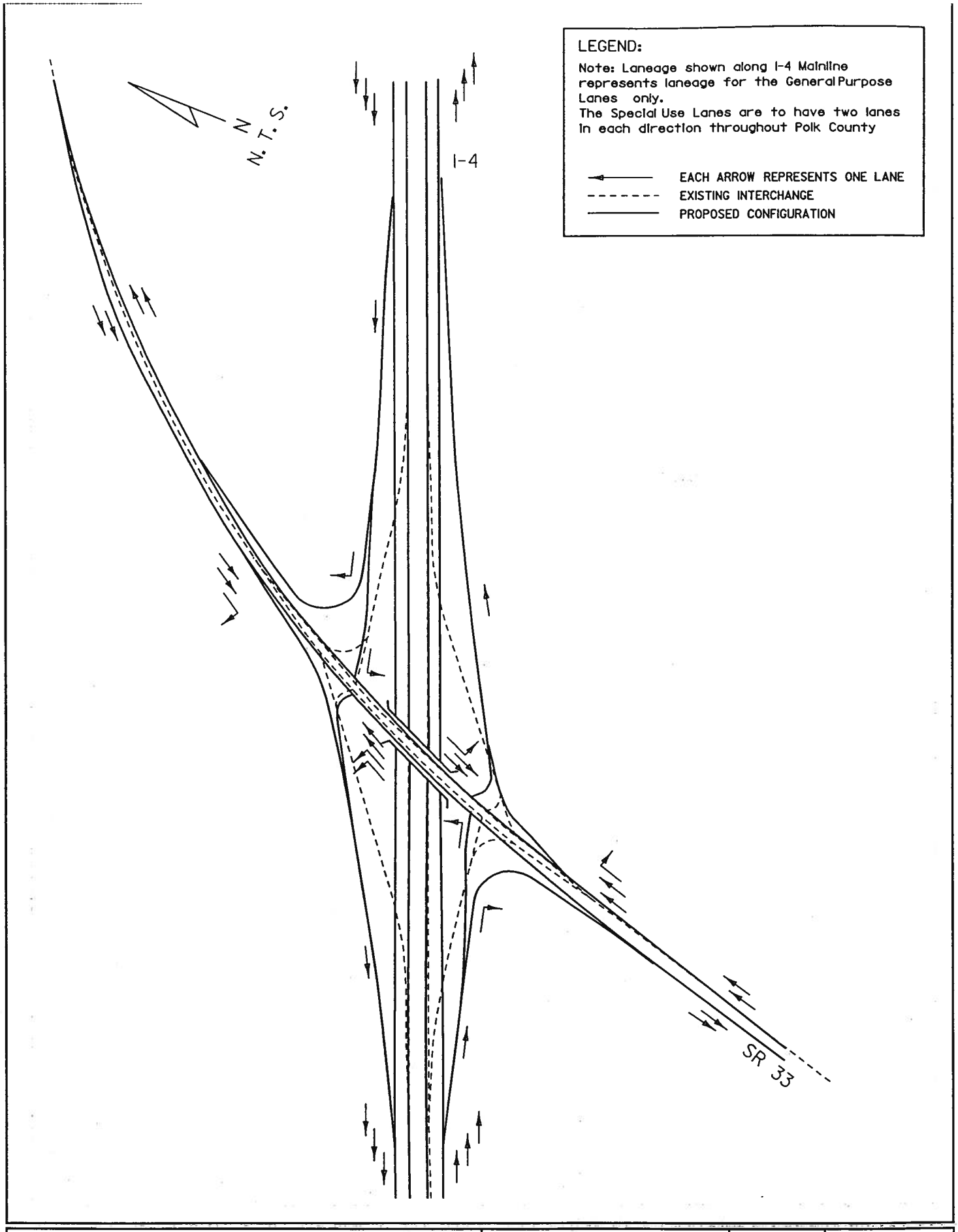
SCHEMATIC DIAGRAM OF CR 582 INTERCHANGE CONCEPT (SLR-5)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-9



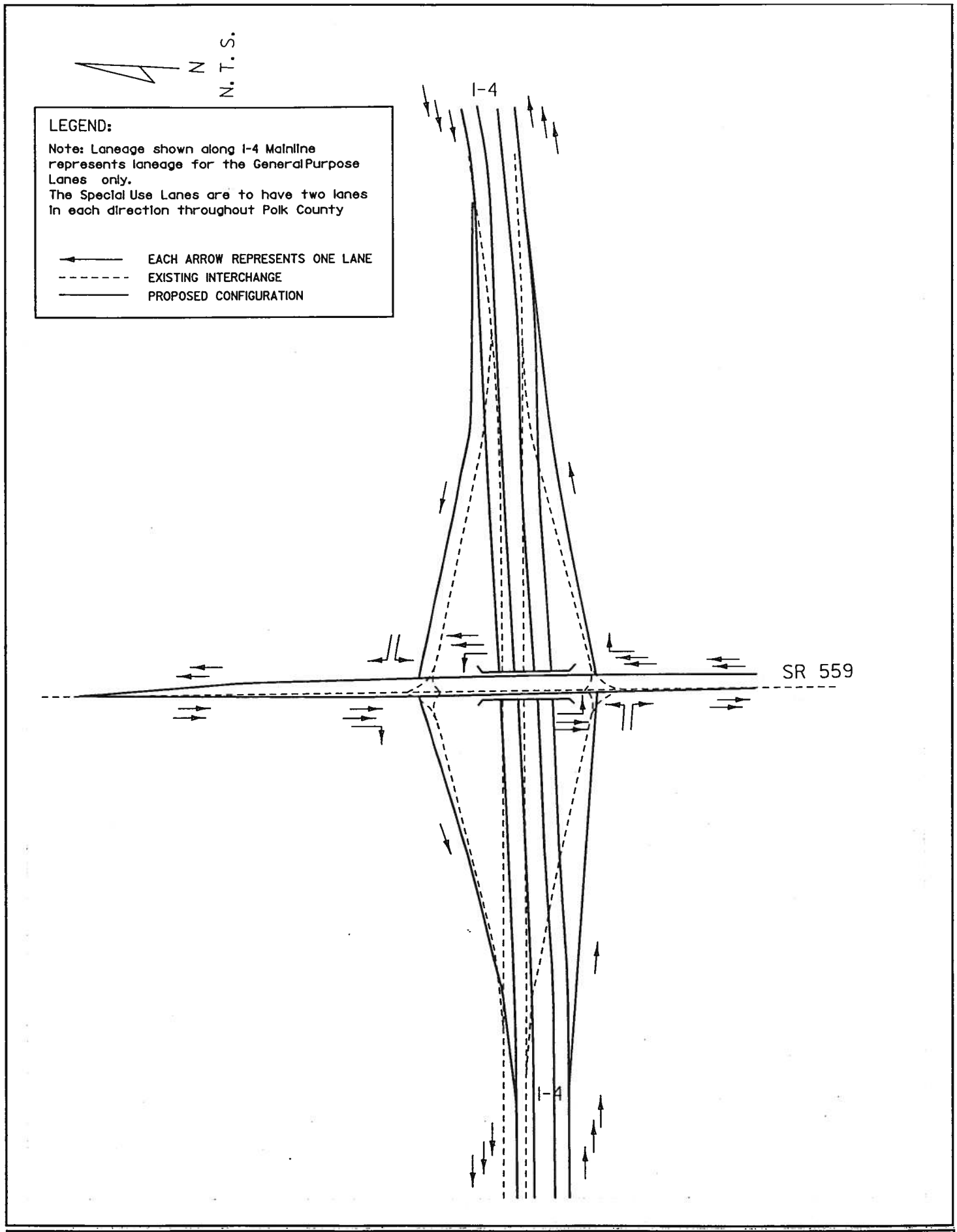
SCHEMATIC DIAGRAM OF CR 582 INTERCHANGE CONCEPT (NCR-6)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-10



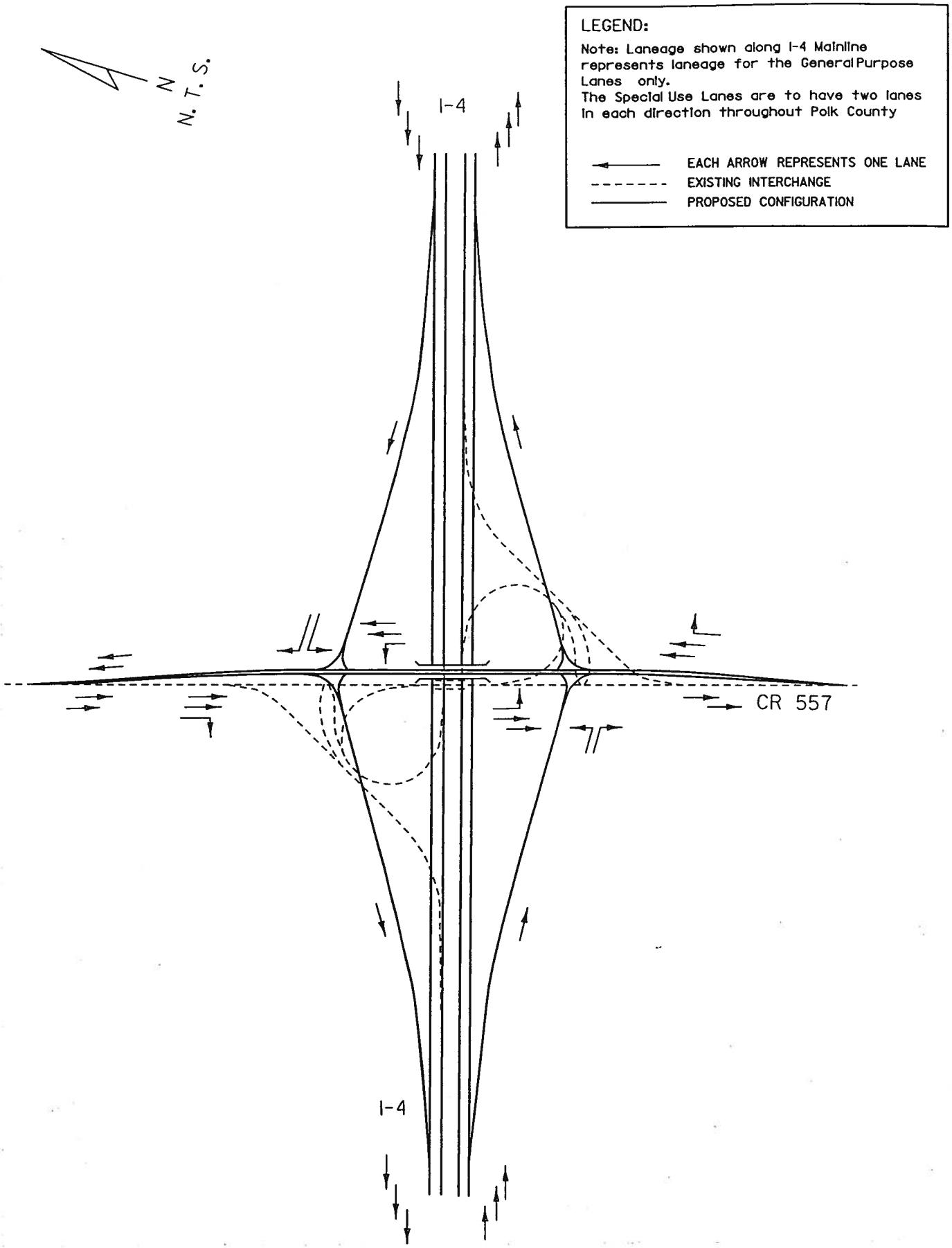
SCHEMATIC DIAGRAM OF CR 582 INTERCHANGE CONCEPT (SLR-7)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-11



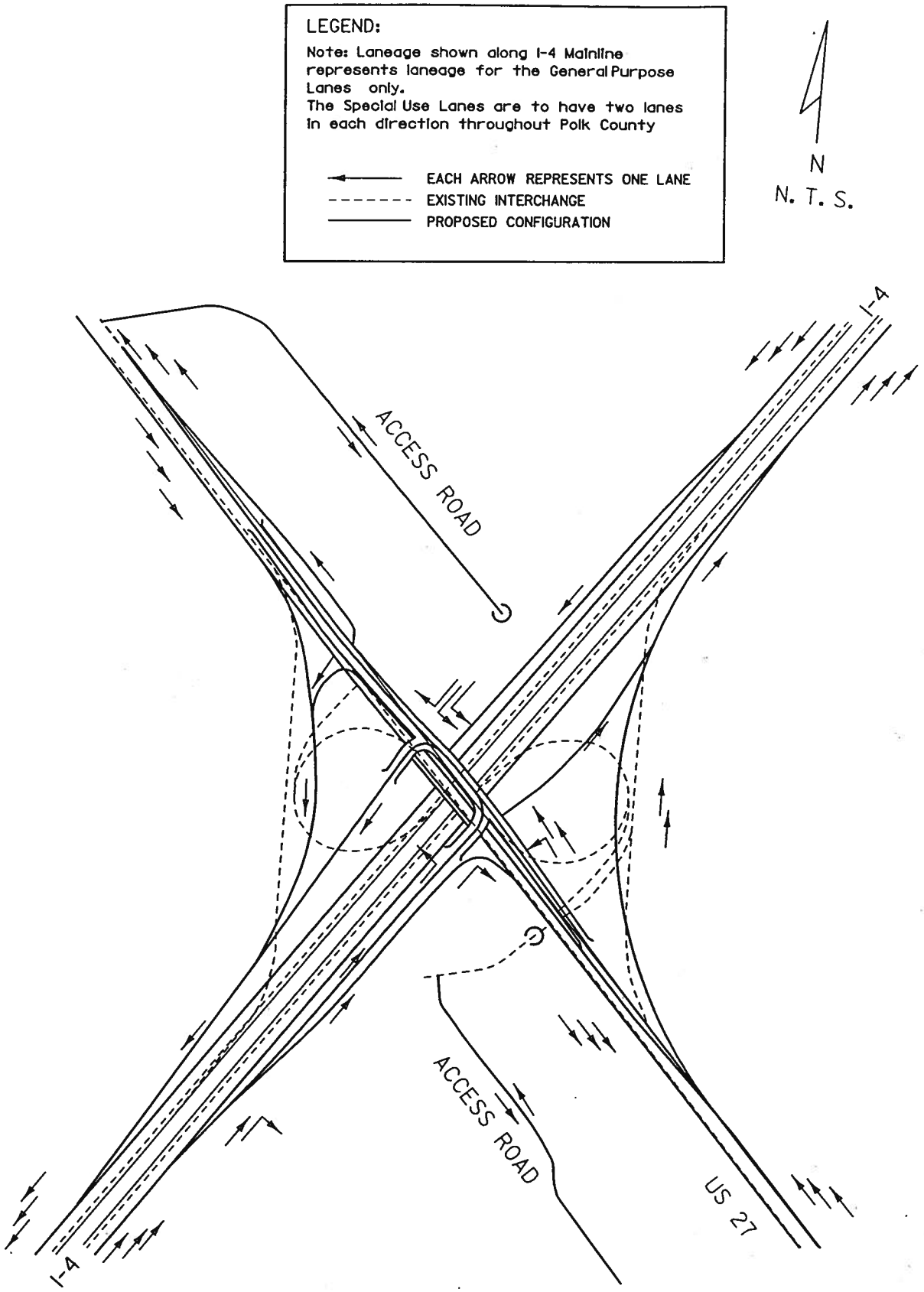
SCHEMATIC DIAGRAM OF SR 33 INTERCHANGE CONCEPT	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-12



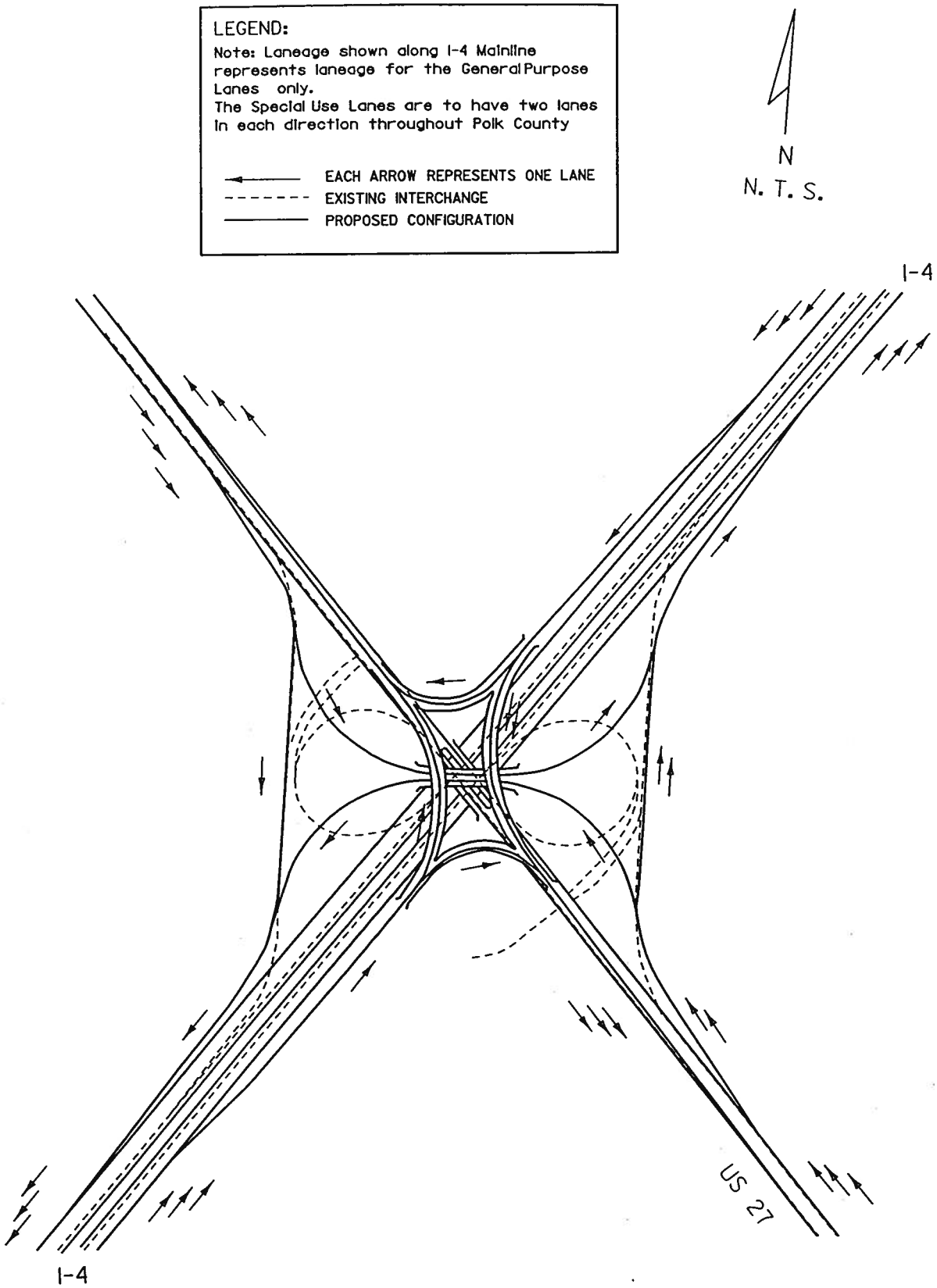
SCHEMATIC DIAGRAM OF SR 559 INTERCHANGE CONCEPT	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-13



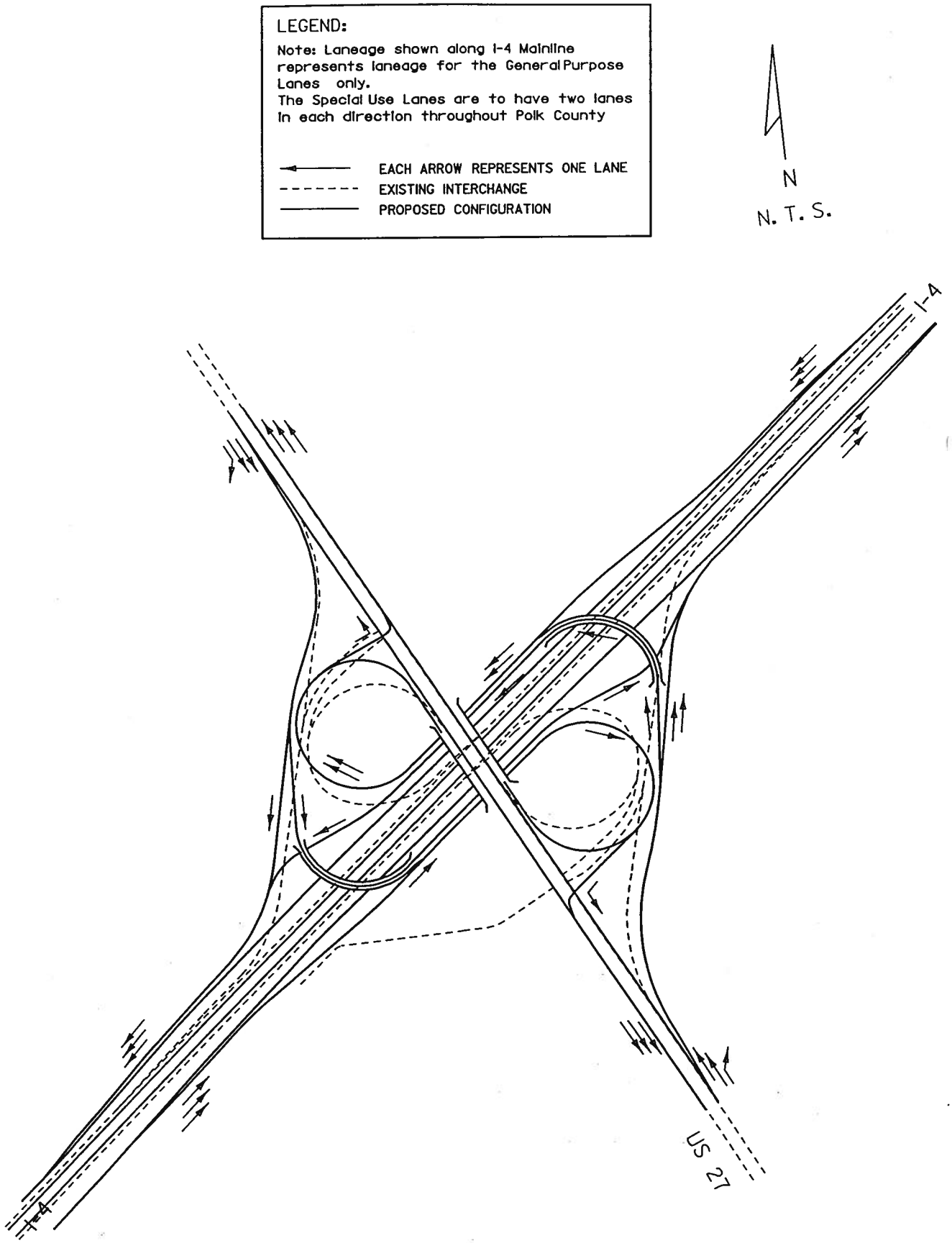
SCHEMATIC DIAGRAM OF CR 557 INTERCHANGE CONCEPT	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-14



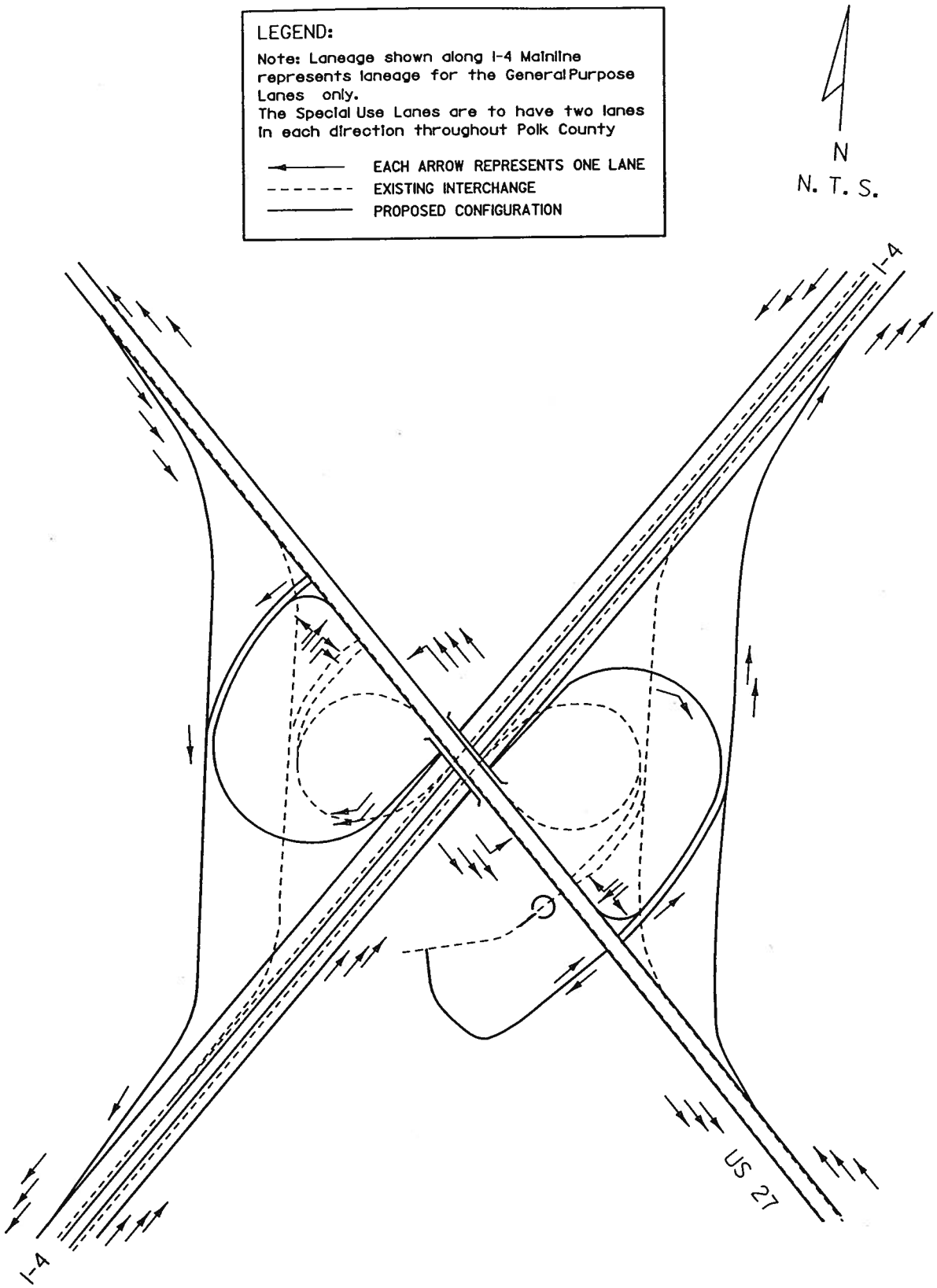
SCHEMATIC DIAGRAM OF US 27 INTERCHANGE CONCEPT (US27-1)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-15



SCHEMATIC DIAGRAM OF US 27 INTERCHANGE CONCEPT (US27-2)	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 3-16



SCHEMATIC DIAGRAM OF US 27 INTERCHANGE CONCEPT (US27-3)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-17



SCHEMATIC DIAGRAM OF US 27 INTERCHANGE CONCEPT (US27-4)	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-18

3.5 Alternatives Evaluation Matrices

Once the typical sections to be analyzed were selected and the avoidance and minimization strategy was developed, evaluation matrices were prepared for each segment of this project. The matrices quantify impacts to the human and natural environment and provide a comparison of impacts and costs for the widening of I-4 to the left, right or centering on the existing alignment. Costs and impacts were tabulated by sheet to enable the mixing and matching of left-center-right where appropriate to select the preferred alternative alignment which often is a combination of various left-center-right options. The total segment left-center-right costs and impacts are shown on the matrices. The matrices include costs for design, right-of-way for roadway, right-of-way for storm water management facilities, relocations and business damages, construction, additional maintenance of traffic, major utility relocations, environmental mitigation and contamination. The preferred alternative alignments shown in the matrices support and are consistent with the alignment strategy presented in the Corridor Analysis Report.

The information tabulated in the evaluation matrices quantifies the potential impacts identified in the alignment strategy and attaches costs to those impacts (based on specific typical sections) for comparative purposes. Only those typical sections deemed appropriate in each project segment were included in the matrices. The matrices allow a decision to be made for the general alignment of the entire segment (left-center-right) and for a typical section type (urban-rural). Specific alignment shifts within a segment require additional detailed analysis. For example, the matrix for Segment 2identified the costs for the major utility relocations associated with left or right alignment shifts between Kathleen Road and US 98. In Segment 3, the matrix quantified the significant potential impacts to the Holiday Inn and Paddock Club Apartments properties. The additional construction and wetland mitigation costs associated with an encroachment into Lake Agnes and Little Lake Agnes were identified in Segment 4. In Segment 7, the additional cost for maintenance of traffic associated with a centered alignment was identified. These areas were further analyzed in greater detail to avoid or minimize the potential for significant impacts. See Section 3.4.3 of this report for a description of the alignment shiftsin Segments 2, 3, 4 and 7.

An evaluation matrix was prepared for the four alternative interchange concepts at US 27. The matrix aided in the selection of the US27-4 alternative by identifying the significant right-of-way and structure costs differences associated with each concept.

The alignment and typical section alternatives evaluation matrices by project segment are shown in Figures 3-19 through 3-26, pages 3-35 through 3-42. The CR 582 interchange alternative comparison matrix is shown in Figure 3-27, page 3-43. The US 27 interchange alternatives comparison matrix is shown in Figure 3-28, page 3-44.

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 2

West of Memorial Boulevard to West of US 98

5.8 km (3.6 mi)

Evaluation Factor	Measure	91.4 m (300 ft) Urban Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million		$11.03	
Right-of-Way Cost (Roadway)	$ x Million		$4.12	
Right-of-Way Cost (Storm Water Management)	$ x Million		$0.78	
Business Damages and Relocation Cost	$ x Million		$0.09	
LRE Construction Cost (includes 10% MOT)	$ x Million		$73.52	
Additional Maintenance of Traffic Cost	$ x Million		$0.00	
Major Utility Relocation Cost	$ x Million		$1.99	
Mitigation Cost	$ x Million		$0.16	
Contamination Cleanup Cost	$ x Million		$0.00	
Total Segment Cost	$ x Million		**$91.69**	
Relocations - Business	No.		0	
Relocations - Residential	No.		6	
Potential Contamination Sites	No.		0	
Parcels within Right-of-Way	No.		51	
Right-of-Way (Roadway)	Ha (ac)		3.4 (8.5)	
Right-of-Way (Storm Water Management)	Ha (ac)		7.3 (18.0)	
Wetlands	Ha (ac)		0.8 (2.1)	
Threatened & Endangered Species	H - M - L		Low	
Sensitive Cultural Features	No.		1	
Preferred Alternative			*	

* The preferred alignment is a combination of left, center and right alignments typically within the existing right-of-way based on a sheet by sheet evaluation of impacts and costs.

ALTERNATIVES EVALUATION MATRIX SEGMENT 2	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-19

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 8

US 98 Interchange

0.8 km (0.5 mi)

Evaluation Factor	Measure	91.4 m (300 ft) Urban Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million		$4.38	
Right-of-Way Cost (Roadway)	$ x Million		$1.66	
Right-of-Way Cost (Storm Water Management)	$ x Million		$0.15	
Business Damages and Relocation Cost	$ x Million		$0.26	
LRE Construction Cost (includes 10% MOT)	$ x Million		$29.19	
Additional Maintenance of Traffic Cost	$ x Million		$0.00	
Major Utility Relocation Cost	$ x Million		$0.00	
Mitigation Cost	$ x Million		$0.47	
Contamination Cleanup Cost	$ x Million		$0.00	
Total Segment Cost	$ x Million		**$36.11**	
Relocations - Business	No.		1	
Relocations - Residential	No.		10	
Potential Contamination Sites	No.		0	
Parcels within Right-of-Way	No.		41	
Right-of-Way (Roadway)	Ha (ac)		2.1 (5.2)	
Right-of-Way (Storm Water Management)	Ha (ac)		1.4 (3.5)	
Wetlands	Ha (ac)		2.5 (6.2)	
Threatened & Endangered Species	H - M - L		Low	
Sensitive Cultural Features	No.		0	
Preferred Alternative			*	

ALTERNATIVES EVALUATION MATRIX SEGMENT 8	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-20

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 3

East of US 98 to East of SR 33

9.5 km (5.9 mi)

Evaluation Factor	Measure	91.4 m (300 ft) Urban Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million		$14.03	
Right-of-Way Cost (Roadway)	$ x Million		$5.37	
Right-of-Way Cost (Storm Water Management)	$ x Million		$1.29	
Business Damages and Relocation Cost	$ x Million		$0.00	
LRE Construction Cost (includes 10% MOT)	$ x Million		$93.53	
Additional Maintenance of Traffic Cost	$ x Million		$0.00	
Major Utility Relocation Cost	$ x Million		$1.86	
Mitigation Cost	$ x Million		$2.06	
Contamination Cleanup Cost	$ x Million		$0.00	
Total Segment Cost	$ x Million		**$118.14**	
Relocations - Business	No.		0	
Relocations - Residential	No.		0	
Potential Contamination Sites	No.		0	
Parcels within Right-of-Way	No.		32	
Right-of-Way (Roadway)	Ha (ac)		15.6 (38.5)	
Right-of-Way (Storm Water Management)	Ha (ac)		11.9 (29.5)	
Wetlands	Ha (ac)		11.1 (27.4)	
Threatened & Endangered Species	H - M - L		Low	
Sensitive Cultural Features	No.		0	
Preferred Alternative			*	

* The preferred alignment is a combination of left, center and right alignments typically within the existing right-of-way based on a sheet by sheet evaluation of impacts and costs.

ALTERNATIVES EVALUATION MATRIX SEGMENT 3	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-21

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 4

East of SR 33 to East of SR 559

9.8 km (6.1 mi)

Evaluation Factor	Measure	128.8 m (422.6 ft) Rural Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million	$11.15	$9.04	$11.15
Right-of-Way Cost (Roadway)	$ x Million	$7.80	$8.38	$8.18
Right-of-Way Cost (Storm Water Management)	$ x Million	$1.86	$1.86	$1.86
Business Damages and Relocation Cost	$ x Million	$0.06	$0.06	$0.00
LRE Construction Cost (includes 10% MOT)	$ x Million	$60.26	$60.26	$60.26
Additional Maintenance of Traffic Cost @ 8%	$ x Million	$4.82	$0.00	$4.82
Major Utility Relocation Cost	$ x Million	$0.34	$1.77	$1.83
Mitigation Cost	$ x Million	$1.04	$1.04	$0.67
Contamination Cleanup Cost	$ x Million	$0.00	$0.00	$0.00
Total Segment Cost	$ x Million	**$87.33**	**$82.41**	**$88.77**
Relocations - Business	No.	0	0	0
Relocations - Residential	No.	4	4	0
Potential Contamination Sites	No.	2	2	2
Parcels within Right-of-Way	No.	27	45	26
Right-of-Way (Roadway)	Ha (ac)	29.8 (73.5)	32.3 (79.7)	31.5 (75.6)
Right-of-Way (Storm Water Management)	Ha (ac)	17.3 (42.7)	17.3 (42.7)	17.3 (42.7)
Wetlands	Ha (ac)	5.6 (13.9)	5.6 (13.9)	3.6 (8.9)
Threatened & Endangered Species	H - M - L	Low	Low	Low
Sensitive Cultural Features	No.	0	0	0
Preferred Alternative			*	

ALTERNATIVES EVALUATION MATRIX SEGMENT 4	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-22

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 5

East of SR 559 to East of CR 557

6.4 km (4.0 mi)

Evaluation Factor	Measure	128.8 m (422.6 ft) Rural Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million	$6.58	$6.10	$6.58
Right-of-Way Cost (Roadway)	$ x Million	$2.70	$2.49	$2.47
Right-of-Way Cost (Storm Water Management)	$ x Million	$0.87	$0.87	$0.87
Business Damages and Relocation Cost	$ x Million	$0.11	$0.11	$0.11
LRE Construction Cost (includes 10% MOT)	$ x Million	$40.64	$40.64	$40.64
Additional Maintenance of Traffic Cost @ 8%	$ x Million	$3.25	$0.00	$3.25
Major Utility Relocation Cost	$ x Million	$0.00	$0.11	$0.11
Mitigation Cost	$ x Million	$3.60	$3.60	$3.36
Contamination Cleanup Cost	$ x Million	$0.00	$0.00	$0.00
Total Segment Cost	$ x Million	**$57.75**	**$53.92**	**$57.39**
Relocations - Business	No.	1	1	1
Relocations - Residential	No.	0	0	0
Potential Contamination Sites	No.	0	0	0
Parcels within Right-of-Way	No.	14	19	10
Right-of-Way (Roadway)	Ha (ac)	35.0 (86.3)	33.3 (82.2)	33.0 (81.4)
Right-of-Way (Storm Water Management)	Ha (ac)	8.1 (20.0)	8.1 (20.0)	8.1 (20.0)
Wetlands	Ha (ac)	19.4 (48.0)	19.4 (48.0)	18.1 (44.8)
Threatened & Endangered Species	H - M - L	Low	Low	Low
Sensitive Cultural Features	No.	0	0	0
Preferred Alternative			*	

ALTERNATIVES EVALUATION MATRIX SEGMENT 5	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-23

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 6

East of CR 557 to West of US 27

10.0 km (6.2 mi)

Evaluation Factor	Measure	128.8 m (422.6 ft) Rural Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million	$7.29	$7.36	$7.29
Right-of-Way Cost (Roadway)	$ x Million	$3.58	$3.55	$3.62
Right-of-Way Cost (Storm Water Management)	$ x Million	$1.35	$1.35	$1.35
Business Damages and Relocation Cost	$ x Million	$0.00	$0.00	$0.00
LRE Construction Cost (includes 10% MOT)	$ x Million	$46.74	$46.74	$46.74
Additional Maintenance of Traffic Cost	$ x Million	$1.87	$2.34	$1.87
Major Utility Relocation Cost	$ x Million	$0.00	$0.00	$0.00
Mitigation Cost	$ x Million	$7.65	$7.35	$7.56
Contamination Cleanup Cost	$ x Million	$0.00	$0.00	$0.00
Total Segment Cost	$ x Million	**$68.48**	**$68.69**	**$68.43**
Relocations - Business	No.	0	0	0
Relocations - Residential	No.	0	0	0
Potential Contamination Sites	No.	0	0	0
Parcels within Right-of-Way	No.	7	5	4
Right-of-Way (Roadway)	Ha (ac)	15.3 (37.9)	15.2 (37.5)	15.4 (38.1)
Right-of-Way (Storm Water Management)	Ha (ac)	12.5 (30.9)	12.5 (30.9)	12.5 (30.9)
Wetlands	Ha (ac)	41.3 (102.0)	39.7 (98.0)	40.8 (100.8)
Threatened & Endangered Species	H - M - L	Low	Low	Low
Sensitive Cultural Features	No.	0	0	0
Preferred Alternative			*	

ALTERNATIVES EVALUATION MATRIX SEGMENT 6	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-24

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 9

US 27 Interchange

1.1 km (0.7 mi)

Evaluation Factor	Measure	128.8 m (422.6 ft) Rural Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million	$4.07	$3.77	$4.07
Right-of-Way Cost (Roadway)	$ x Million	$22.50	$22.34	$21.70
Right-of-Way Cost (Storm Water Management)	$ x Million	$0.21	$0.21	$0.21
Business Damages and Relocation Cost	$ x Million	$0.29	$0.50	$0.44
LRE Construction Cost (includes 10% MOT)	$ x Million	$25.15	$25.15	$25.15
Additional Maintenance of Traffic Cost @ 8%	$ x Million	$2.01	$0.00	$2.01
Major Utility Relocation Cost	$ x Million	$0.00	$0.00	$0.00
Mitigation Cost	$ x Million	$0.00	$0.00	$0.00
Contamination Cleanup Cost	$ x Million	$0.00	$0.00	$0.00
Total Segment Cost	$ x Million	**$54.24**	**$51.97**	**$53.59**
Relocations - Business	No.	4	4	4
Relocations - Residential	No.	0	0	0
Potential Contamination Sites	No.	4	4	4
Parcels within Right-of-Way	No.	23	23	23
Right-of-Way (Roadway)	Ha (ac)	40.3 (99.6)	39.7 (98.1)	37.2 (92.0)
Right-of-Way (Storm Water Management)	Ha (ac)	2.0 (4.9)	2.0 (4.9)	2.0 (4.9)
Wetlands	Ha (ac)	0 (0)	0 (0)	0 (0)
Threatened & Endangered Species	H - M - L	Low	Low	Low
Sensitive Cultural Features	No.	0	0	0
Preferred Alternative			*	

In response to comments received from the public at the Public Hearings held on October 12, and 13, 1998, the PD&E concept for the US 27 interchange has been subsequently refined to avoid the taking of 3 businesses - McDonalds, Wendys and New York Pizza World restaurants. The concept plan shown at the Public Hearing indicated that relocating the frontage road would impact the above 3 restaurants. This concept change results in avoiding the taking of McDonalds and New York Pizza World, and minimizing the right-of-way taking from Wendys.

ALTERNATIVES EVALUATION MATRIX SEGMENT 9	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-25

I-4 Project Development and Environment Study

ALTERNATIVES EVALUATION MATRIX

Segment 7

East of US 27 to the Polk/Osceola County Line

3.9 km (2.4 mi)

Evaluation Factor	Measure	128.8 m (422.6 ft) Rural Typical Section		
		Left	Center	Right
Design Cost (15% of (Construction + MOT))	$ x Million	$2.42	$2.61	$2.42
Right-of-Way Cost (Roadway)	$ x Million	$1.19	$1.03	$1.20
Right-of-Way Cost (Storm Water Management)	$ x Million	$0.52	$0.52	$0.52
Business Damages and Relocation Cost	$ x Million	$0.00	$0.00	$0.00
LRE Construction Cost (includes 10% MOT)	$ x Million	$16.13	$16.13	$16.13
Additional Maintenance of Traffic Cost @ 8%	$ x Million	$0.00	$1.29	$0.00
Major Utility Relocation Cost	$ x Million	$0.00	$0.00	$0.00
Mitigation Cost	$ x Million	$1.17	$1.16	$1.16
Contamination Cleanup Cost	$ x Million	$0.00	$0.00	$0.00
Total Segment Cost	$ x Million	**$21.43**	**$22.74**	**$21.43**
Relocations - Business	No.	0	0	0
Relocations - Residential	No.	0	0	0
Potential Contamination Sites	No.	0	0	0
Parcels within Right-of-Way	No.	4	5	4
Right-of-Way (Roadway)	Ha (ac)	7.1 (17.6)	6.2 (15.3)	7.2 (17.8)
Right-of-Way (Storm Water Management)	Ha (ac)	4.9 (12.1)	4.9 (12.1)	4.9 (12.1)
Wetlands	Ha (ac)	6.3 (15.6)	6.2 (15.4)	6.2 (15.4)
Threatened & Endangered Species	H - M - L	Medium	Medium	Medium
Sensitive Cultural Features	No.	0	0	0
Preferred Alternative			*	

ALTERNATIVES EVALUATION MATRIX SEGMENT 7	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-26

I-4 Project Development and Environment Study

COMPARATIVE COST EVALUATION MATRIX

US 27 Interchange Concepts

Evaluation Factor	Measure	Interchange Configuration Alternative			
		1	2	3	4
		US27-1	US27-2	US27-3	US27-4
Design Cost (15% of Construction)	$ x Million	$5.80	$7.26	$5.34	$3.77
Right-of-Way Cost (Roadway)	$ x Million	$20.60	$8.54	$20.60	$22.34
Right-of-Way Cost (Storm Water Management)	$ x Million	$0.21	$0.21	$0.21	$0.21
Business Damages and Relocation Cost	$ x Million	$1.52	$1.05	$1.52	$3.24
LRE Construction Cost (includes 10% MOT)	$ x Million	$35.80	$48.40	$35.60	$25.15
Additional Maintenance of Traffic Cost @ 8%	$ x Million	$2.86	$0.00	$0.00	$0.00
Major Utility Relocation Cost	$ x Million	$0.00	$0.00	$0.00	$0.00
Mitigation Cost	$ x Million	$0.00	$0.00	$0.00	$0.00
Contamination Cleanup Cost	$ x Million	$0.00	$0.00	$0.00	$0.00
Comparative Cost *	$ x Million	**$66.79**	**$65.46**	**$63.27**	**$54.71**
Relocations - Business	No.	12	2	12	2
Relocations - Residential	No.	0	0	0	0
Potential Contamination Sites	No.	4	4	4	4
Parcels within Right-of-Way	No.	59	23	59	23
Right-of-Way (Roadway)	Ha (ac)	7.9 (19.4)	6.3 (15.6)	7.9 (19.4)	39.7 (98.1)
Right-of-Way (Storm Water Management)	Ha (ac)	2.0 (4.9)	2.0 (4.9)	2.0 (4.9)	2.0 (4.9)
Preferred Alternative					*

* These costs **do not** represent the total costs for the interchange. They represent only the **major** cost items which differ for each alternative. The total project costs for Segment 9 are shown in Figure No. 8-25.

COMPARATIVE COST EVALUATION MATRIX US 27 INTERCHANGE CONCEPTS	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-27

I-4 Project Development and Environment Study

COMPARATIVE COST EVALUATION MATRIX

CR 582 Socrum Loop Road

Interchange Concepts

Evaluation Factor	Measure	Interchange Configuration Alternative						
		1	2	3	4	5	6	7
		OCR-1	OCR-2	SLR-3	SLR-4	SLR-5	NCR-6	SLR-7
Design Cost (15% of Construction)	$ x Million	$1.38	$1.71	$1.75	$1.74	$1.37	$1.77	$1.10
Right-of-Way Cost (Roadway)	$ x Million	$6.53	$5.83	$4.58	$6.01	$4.93	$1.97	$1.20
Right-of-Way Cost (Storm Water Management)	$ x Million	$0.30	$0.25	$0.30	$0.30	$0.37	$0.30	$0.30
Business Damage and Relocation Cost	$ x Million	$0.56	$0.15	$0.41	$0.30	$0.03	$0.28	$0.00
Comparative Construction Cost [1]	$ x Million	$9.19	$11.41	$11.66	$11.57	$9.13	$11.83	$7.31
Major Utility Relocation Cost [2]	$ x Million	$0.53	$0.53	$1.93	$1.66	$1.64	$1.58	$1.41
Comparative Cost *	$ x Million	**$18.49**	**$19.88**	**$20.63**	**$21.58**	**$17.47**	**$17.73**	**$11.32**
Relocations - Business	No.	0	0	0	1	0	1	0
Relocations - Residential	No.	42	5	16	0	1	32	0
Parcels within Right-of-Way	No.	12	9	8	10	10	6	3
Right-of-Way (Roadway)	Ha (ac)	10.4 (25.6)	11.6 (28.6)	4.7 (11.7)	5.1 (12.5)	5.1 (12.5)	2.1 (5.2)	2.0 (5.0)
Right-of-Way (Storm Water Management)	Ha (ac)	2.8 (6.8)	2.3 (5.8)	2.8 (6.8)	3.5 (8.6)	3.5 (8.6)	2.8 (6.9)	2.8 (6.9)
Preferred Alternative								*

[1] These construction cost estimates do not include the I-4 mainline improvements. They would remain essentially the same for all interchange alternatives.

[2] Major utilities in the area of the Socrum Loop Road interchange include the FGT pipeline (@ $900,000 per mile) along the north side of I-4 and the American Telecasting cable television microwave receiving tower (@ $121,500) located between the Holiday Inn and the Paddock Club Apartments. Impacts to the GTE facility (@$1.29 million) in the southwest quadrant of the existing interchange is considered a utility impact cost.

* These costs **do not** represent the total costs for the interchange. They represent only the **major** cost items which differ for each alternative. The total project costs for Segment 3 are shown in Figure No. 8-20.

COMPARATIVE COST EVALUATION MATRIX CR 582 SOCRUM LOOP ROAD	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 3-28

3.6 Special Use Lane Access

Because of the barrier wall separating the special use lanes from the general purpose lanes, ramp connections between the proposed special use and general purpose lanes are provided in the recommended improvements. The 1994 I-4 Master Plan identified four general locations for access to and from the special use lanes within the limits of this project. The selectionof general locations was based on a minimum spacing of 4.8 km (3.0 mi), demand at major destinations in the corridor, the spacing of general purpose lane interchanges, I-4 mainline geometry and the potential forenvironmental impacts. Three of the slip ramp locations are within these project limits. A weaving analysis was performed at each of the proposed general locations to establish minimum allowable distances from interchanges.

Location No. 1 is between the CR 582 and SR 33 interchanges (Segment 3). This location serves the special use demand generated by the Kathleen Road, US 98, CR 582 and SR 33 interchanges. The westbound special use lane exit slip ramp is about 2167 m (7,110 ft) east (gore-to-gore) of the CR 582 interchange I-4 westbound exit ramp. The eastbound special use lane entrance slip ramp is about 2716 m (8,910 ft) east (gore-to-gore) of the CR 582 interchange I-4 eastbound entrance ramp. Both distances exceed the recommended minimum weaving length of 2012 m (6,600 ft).

Location No. 2 is west of the proposed Polk County Parkway East interchange and east of the SR 33 interchange (Segment 4). This location serves the anticipated demand created by the proposed Polk County Parkway East interchange. The westbound special use lane entrance slip ramp is about 1957 m (6,420 ft) west (gore-to-gore) of the Polk County Parkway East interchange I-4 westbound entrance ramp. The eastbound special use lane exit ramp is about 1917 m (6,290 ft) west (gore-to-gore) of the Polk County Parkway East interchange I-4 eastbound exit ramp. Both distances exceed the recommended minimum weaving length of 762 m (2,500 ft).

Location No. 3 was shown in the 1994 I-4 Master Plan between the SR 559 and CR 557 interchanges in Segment 5, serving demand created by the Polk County Parkway and US 27 interchanges. Physical, geometric and environmental constraints required that Location No. 3 be separated into Location No. 3a and Location No. 3b. Location No. 3a (the eastbound special use lane entrance slip ramp) has been relocated into Segment 4 between the CR 655 overpass and the SR 559 interchange. This location is about 2414 m (7,920 ft) east (gore-to-gore) of the proposed Polk County Parkway I-4 eastbound entrance ramp (the minimum recommended weaving distance at this location). Location No. 3b (the westbound special use lane exit ramp) has been relocated into Segment 6 east of the CR 557 interchange. This location is about 1080 m (3,540 ft) east (gore-to-gore) of the CR 557 interchange westbound exit ramp. This location exceeds the minimum acceptable weaving distance of 762 m (2,500 ft).

Note: A fourth location was described in the 1994 I-4 Master Plan as being "located at the end of the project" (Segment 7). Exhibit No. 9-4 of the 1994 I-4 Master Plan (included in Section 6 of the Appendix) indicates that the fourth location is in the area of the Polk/Osceola County line and the CR 532 interchange (possibly beyond the limits of this project). An analysis of theconsequences of placing a slip ramp east of the Polk/Osceola County line showed that the I-4 general purpose lane LOS east of US 27 would degrade to an unacceptable level. The location of this special use lane access willbe located in Osceola County and may be influenced by the results of the master plan currently being prepared for I-4 in Osceola County.

Three types of special use lane access ramps were considered for this project - underpass, flyover and slip ramps. Preliminary estimates of construction and right-of-way costs showed that underpass and flyover ramps would cost about $4,780,000 and $4,144,000, respectively. Slip ramp construction and right-of-way cost estimates ranged from about $150,000 to about $606,000. Because of the significant estimated cost differences between slip ramps and the underpass or flyover ramps, further analysis of the operational characteristics of slip ramps was performed to determine their suitability for use in the recommended improvements for I-4.

During the development of the slip ramp criteria, concerns were expressed about the possible misuse of the opening in the barrier wall for illegal, wrong way cross-over maneuvers, left-hand entrance and exit from the general purpose lanes, merging opportunities and signage.

Barrier Wall Openings - Only a strict enforcement policy or some form of physical deterrent such as a gated closure can prevent the opening in the barrier wall from being mis-used for illegal, wrong way cross-over maneuvers. However, elsewhere in Florida (e.g. Orlando and Miami) and throughout the United States (e.g. Southern California, Washington D.C., and Houston), special use lanes are not physically separated from the general purpose lanes and no known operational problems are associated with the non-physically separated special use lanes. The use of a "Jersey" type barrier wall (which allows drivers to observe traffic on the other side of the wall), the widened median at the slip ramp location, the 329 m (1,080 ft) opening in the wall and the projected LOS (which allows a prediction of average vehicle spacing) are all features which decrease the potential for accidents in the event that the barrier wall opening is mis-used.

Left-Hand Entrance and Exit - The design criteria for the recommended slip ramp configuration were selected to reduce the potential for operational difficulties. Drivers intending to use the slip ramp will be advised by signage well in advance. The use of a "Jersey Type" barrier wall separating the special use lanes from the general purpose lanes allows drivers to observe the traffic on the other side of the wall prior to entering the slip ramp. The combination of the acute (2°) divergence angle of the exit ramp, the 329 m (1,080 ft) barrier wall opening, the 152 m (498 ft) parallel merge lane and the 70:1 ratio 252 m (827 ft) entrance taper provides sufficient opportunity for the merging driver to observe the traffic, adjust speed, select an opening in traffic and successfully merge. Because of the visual opportunities provided and the parallel or nearly parallel traffic flow in the slip ramp, the operation of the slip ramp will function much like a simple lane change.

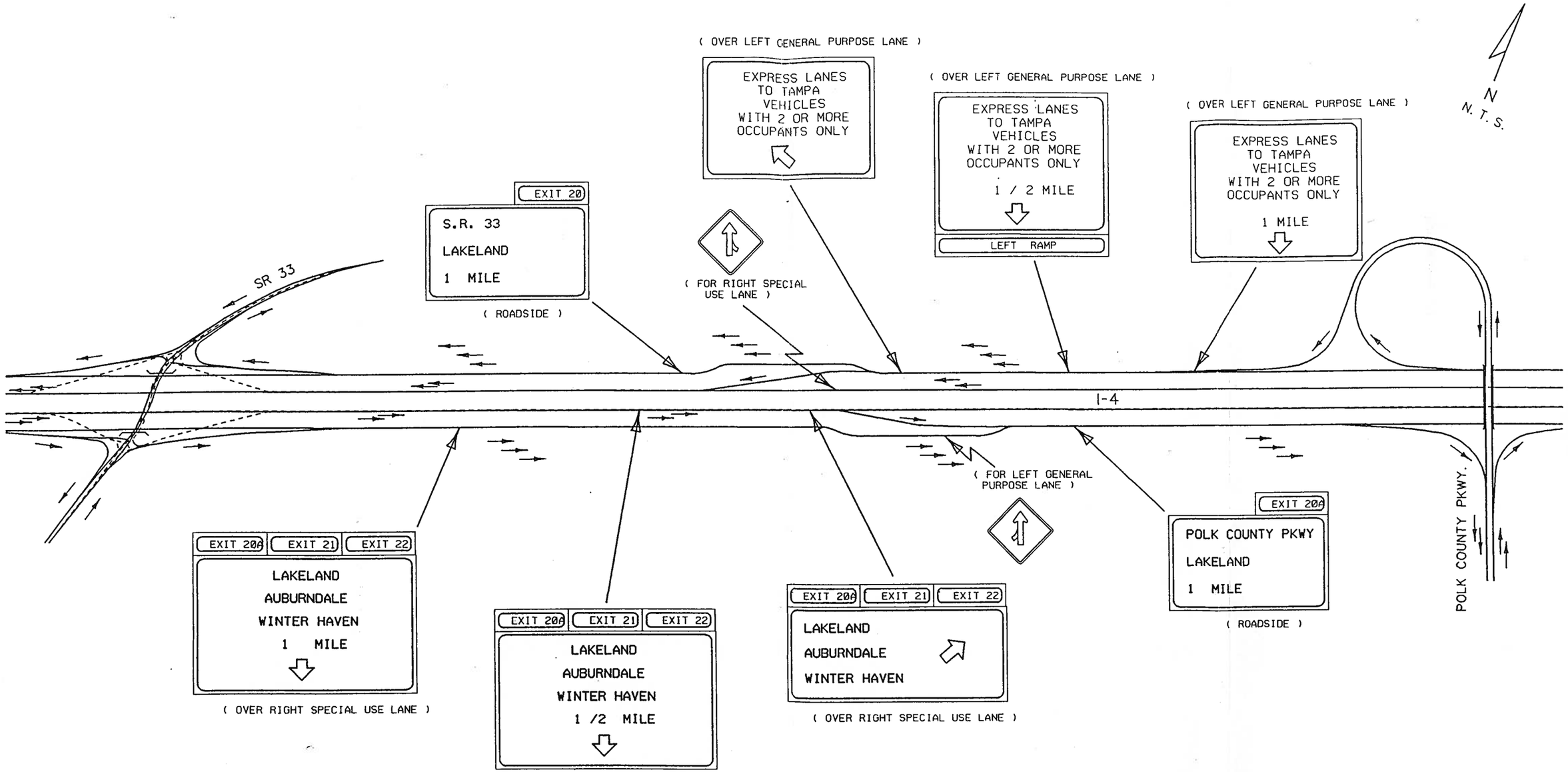
Merging Opportunity - A LOS analysis was performed at the worst case (highest traffic volume) slip ramp location to determine merging opportunities (Location No. 1 - between the CR 582 and SR 33 interchanges). The analysis considered a special use lane exit slip ramp (exiting the right special use lane and entering the left general purpose lane). At this location all freeway segments on the general purpose and special use lanes both upstream and downstream of the slip ramp are predicted to operate at a LOS D or better using the year 2020 1994 I-4 Master Plan traffic volumes. It is assumed that about 15% of the vehicles in the left general purpose lane will merge into the lane(s) to the right (in advance of the slip ramp) to make room for vehicles entering from the slip ramp. For this single lane (left general purpose), the LOS upstream will be B and the LOS downstream will be D, in both the eastbound and westbound directions. Downstream from the slip ramp merge area, the lane balance across the lanes will be reestablished (generally within ½ mile), and a LOS C will result in the eastbound direction and LOS D in the westbound direction. At the anticipated LOS and average speed, the average vehicle gap in the

vicinity of the slip ramp will be a minimum of about 102 m (335 ft) at the point of merge (ref. 1994 Highway Capacity Manual). In reality, vehicles will not keep uniform spacing, but with this average vehicle spacing, merging vehicles will find ample acceptable gaps.

Signage - A signing concept for the slip ramps was developed through coordination with the FDOT Traffic Operations Department. In a coordination meeting on May 6, 1996, it was agreed that the signage concept for the slip ramps should take a general, simple approach. The ultimate proposed I-4 typical section allows drivers (and passengers) in the special use lanes to see the signage directed at the drivers in the general purpose lanes and vice versa. As such, the slip ramp signage should not overload the drivers with too much information. A lot of tourists (many foreign) use I-4 anddigesting and interpreting excessive sign information could be confusing and possibly hazardous. Destination signage should be limited to ultimate destinations such as Orlando/Daytona or Orlando/Tampa. In keeping with a simple approach, the slip ramp signing concept would not sign for specific attractions, butcould sign for the area of the attractions (e.g. Lakeland Area Attractions or Orlando Area Attractions). Because state highway maps, AAA maps, rent-a-car counter maps, etc. and most billboards currently provide exit numbers, the slip ramp signing concept could use exit numbers on the signage (e.g. Lakeland Area, Exits 16 through 20). A detailed signing and marking plan will be developed during subsequent design phases of this project. A graphic diagram showing a typical example of a slip ramp signing concept is shown in Figure 3-29.

Slip Ramps - Slip ramps are connections constructed at grade between the special use lanes and general purpose lanes. Several combinations of design features were evaluated for slip ramps: exit ramps with and without deceleration lanes, various lengths of merge lanes, entrance ramps with or without acceleration lanes, entrance tapers ranging from 50:1 to 70:1, median widths ranging from 7.8 m (26 ft) to 15.0 m (50 ft), barrier wall openings ranging from 131 m (430 ft) to 617 m (2,023 ft), various divergence angles ranging from 2^0 to 4^0 were considered. Safety was the primary consideration when evaluating the possible slip ramp design criteria. The slip ramp design criteria selected for recommendation consists of: no deceleration lane, 2^0 exit divergence angle, 4.5 m (15 ft) wide ramp, 152 m (498 ft) parallel merge lane, 11.4 m (38 ft) median, 329 m (1,080 ft) barrier wall opening and a 70:1 252 m (827 ft) entrance taper. The proposed design criteria and locations of the slip ramps were reviewed and accepted by the FHWA at a meeting on April 11, 1996.

The slip ramp design criteria and general configuration are shown in Figure 3-30. The locations of the slip ramps are shown on the Concept Plans.



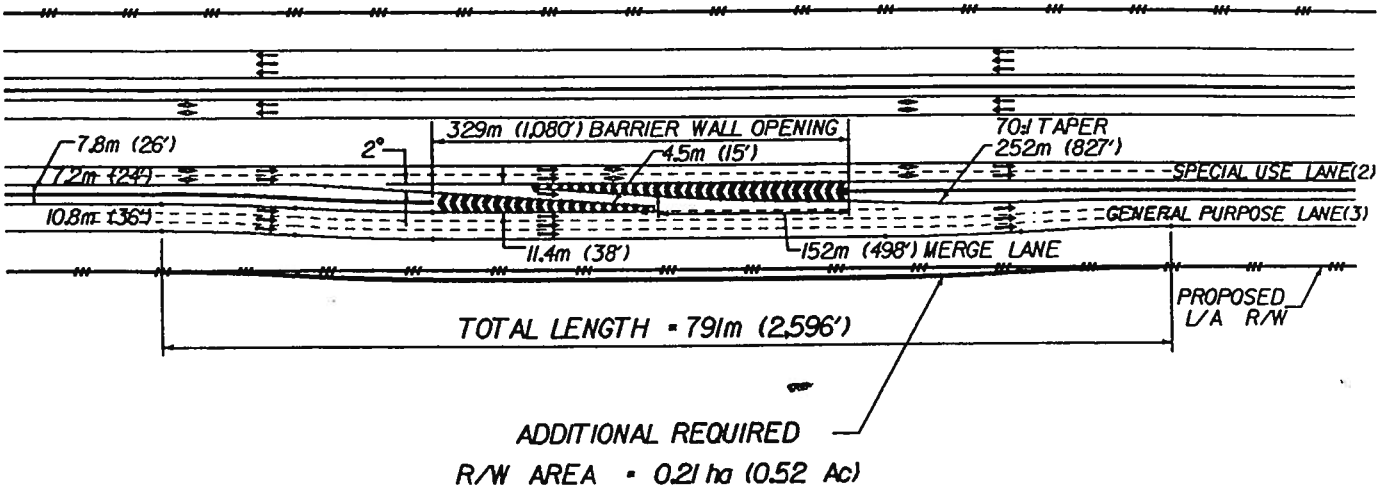
NOTE: This example of the I-4 Special Use Lane Slip Ramp Signing Concept shows typical signage for a westbound special use lane entrance ramp and an eastbound special use lane exit ramp. This exhibit does not attempt to show all signage which may be required for the general purpose lanes.

I-4 Special Use Lane
Slip Ramp Signing Concept

I-4 Preliminary
Engineering Report
State Project No. 16320-1402

4 Polk County

FIGURE
3-29



SPECIAL USE LANE SLIP RAMP

NOT TO SCALE

Special Use Lane Slip Ramp	I-4 Preliminary Engineering Report State Project No. 16320-1402	4 Polk County	FIGURE 3-30

4.0 IMPACTS

This section of the document identifies potential impacts resulting from the proposed improvements to I-4. Effects on both the human and natural environment are described here. Discussions on mitigation are included where appropriate. For additional details, please refer to individual reports as referenced in the sections below.

4.1 Social and Economic Impacts

The following sections address the social and economic impacts of the proposed action. Topics include community services, community cohesion, land use, utilities and railroads, and relocations.

4.1.1 Community Services

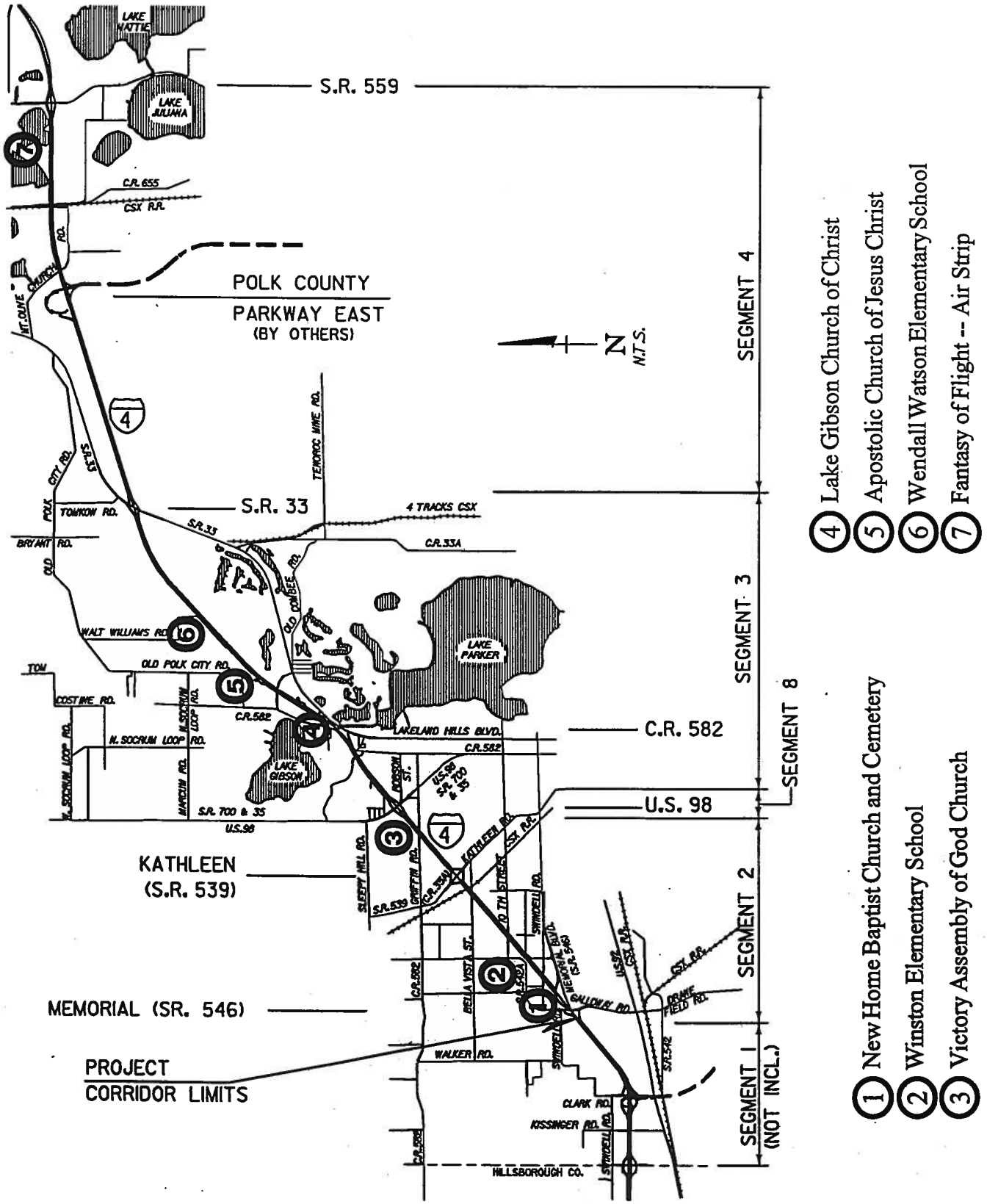
No schools, churches, social service agencies, medical facilities, community centers, or police or fire protection are anticipated to be impacted with the preferred alternative. There are no non-profit social service centers immediately adjacent to the I-4 project.

One school and four churches would be impacted if I-4 were widened to the north. Alternative alignments and typical sections to avoid impacts to these institutions have been developed, as discussed in Section 3. The social service needs of the community were taken into consideration during project development. The locations of the school and churches are shown on the concept plans found under separate cover and on Figure 4-1, page 4-2.

The project area is served by the School Board of Polk County and is comprised of five districts. No impacts to the school districts would occur as a result of the proposed improvements to I-4. School properties located adjacent to the I-4 corridor are shown in Table 4-1. Wendell Watson Elementary School, in Segment 3, would be impacted if the improvements were shifted to the left (north). The recommended alternative is a centered alignment and an urban typical section contained within the existing right-of-way at this location thereby avoiding Wendell Watson Elementary School. Winston Elementary School in Segment 2 will not be impacted.

Table 4-1
SCHOOLS ADJACENT TO THE I-4 CORRIDOR
I-4 Project Development and Environment Study

Study Segment	School Name and Address	Phone Number	School District
2	Winston Elementary 3415 Swindell Road, Lakeland, FL 33809	(941) 499-2890	5
3	Wendell Watson Elementary 6800 Walt Williams Road, Lakeland, FL 33809	(941) 853-6060	5



COMMUNITY SERVICES	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 4-1

Four churches, adjacent to the I-4 right-of-way, have the potential to be impacted by the proposed improvements. However, the alignment strategy developed during the corridor analysis avoids impacts to these churches. The four churches are:

- the New Home Baptist Church and Cemetery in Segment 2, at Memorial Boulevard;
- the Victory Assembly of God Church in Segment 2, west of US 98;
- the Lake Gibson Church of Christ in Segment 3, at Socrum Loop Road; and
- the Apostolic Church of Jesus Christ in Segment 3, on Walt Loop Road.

Fantasy of Flight is an air museum found north of I-4 in Segment 4 in Auburndale. This facility will not be impacted by the proposed improvements to I-4.

4.1.2 Community Cohesion

Title VI of the 1964 Civil Rights Act, and related statutes provides that no person shall on the grounds of race, color, age, religion, sex, national origin, or handicap/disability, be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under any program ofthe Federal, State or local government. Title VIII of the 1968 Civil Rights Act guarantees each person equal opportunity in housing.

In February 1994, the President of the United States issued Executive Order 12898 (Environmental Justice) requiring federal agencies to analyze and address, as appropriate, disproportionately high adverse human health and environmental effects of federal actions on minority populations and low-income populations, when such analysis is required by the National Environmental Policy Act of 1969 (NEPA).

An adverse effect on minority populations or low-income populations occurs when: 1) the adverse effect is predominately borne by a minority population and/or low-income population; or 2) the adverse effect suffered by the minority population and/or low-income population is more severe orgreater in magnitude than the adverse effect suffered by the non-minority population and/or non-low-income population. If a disproportionately high and adverse effect on minority of low-income populations is determined through the NEPA process, then the federal action may not be carried out unless mitigation measures or "environmental enhancements" are included.

The Executive Order 12898 was issued to underscore and complement certain provisions of existing law, including the Title VI and Title VIII and related statutes. This project has been developed in accordance with Title VI, Title VIII and Executive Order 12898.

The existing interstate system through Polk County was constructed in the mid- to late-1950s. At that time, much of the county was very rural; however, the route selected for the facility traversed some neighborhoods, particularly in the Lakeland area. When initially constructed, I-4 became a physical barrier placed within these neighborhoods, severing some community ties. However, over the past forty years, these areas have reestablished themselves as cohesive neighborhoods.

The proposed improvements to I-4 Polk County involve widening the existing facility on the same alignment to accommodate additional general purpose and special use lanes, improve the traffic operations at interchanges and to incorporate the latest design and safety standards. As such, the

additional right-of-way requirements are estimated to impact 20 residences and six businesses along the existing corridor. A small number of these may be minority, ethnic, elderly persons, or low-income persons. The proposed improvements have not been planned to impact any specific groups or individuals, but rather to improve upon the existing facility.

Because the proposed improvements would occur within the existing roadway corridor, social impacts would be minimal. The proposed alignment would not split existing neighborhoods or lead to social isolation. Changes in neighborhood identification and land uses are not anticipated. There would be no separation of residences from community facilities. The proposed project is not anticipated to have any measurable impact on urban renewal, removal of urban blight, or joint land use. The proposed project will have a positive impact on the community as a whole. The proposed action will not impact Section VIII housing or public housing. This project is compatible with projected land use and growth management plans and is consistent with future transportation plans in Polk County.

Proposed improvements to I-4 would enhance community assets and the quality of life in Polk County by improving the level of traffic service; improving emergency evacuation; improving highway safety for travellers on the Polk County road network; and decreasing accident potential by improving freedom of movement while driving on I-4. This project has been developed in accordance with Title VI of the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968.

4.1.3 Land Use

Land uses within the I-4 corridor are discussed in this section. Existing land uses and special land use conditions are described, as are generalized future land use and the consistency of this project with land use planning.

Existing Land Use -- The 1990 Polk County Existing Land Use Maps show that land use along the I-4 corridor throughout Polk County can best be described by dividing the corridor into two sections, the first section being Segments 2 and 8 (from west of Memorial Boulevard to east of US 98) and the second being Segments 3, 4, 5, 6, 7 and 9 (east of US 98 to the Polk/Osceola County line).

The first section is characterized mainly by residential and agricultural land uses from Memorial Boulevard to Kathleen Road and commercial with scattered residential and agricultural land uses from Kathleen Road to east of US 98. This section includes interchanges at Memorial Boulevard (SR 546), Kathleen Road (SR 539) and US 98.

The second section is comprised mainly of residential, agricultural, natural and mining land uses, with scattered commercial. Residential land use dominates from east of US 98 to about 2.4 km (1.5 mi) west of SR 33. Agricultural is the predominant land use from west of SR 33 to SR 559. The area from SR 559 to west of US 27 is primarily natural and mining land uses with scattered agricultural and residential. The US 27 interchange area is commercial. East of US 27 to the Polk/Osceola County line, the land use is mixed agricultural and natural. The interchanges in this section of the I-4 corridor include Socrum Loop Road (CR 582), SR 33, SR 559, CR 557 and US 27.

The following is a brief description of the existing land uses in the entire project area and the general location of these uses.

Residential - About 10 percent of the I-4 project corridor contains residential areas. Low, medium and high density residential areas dominate from west of Memorial Boulevard to Kathleen Road (in Segment 2); scattered residential exists from Kathleen Road to east of US 98 (in Segment 2); and a small residential area is located east and west of Old Combee Road (in Segment 3).

Commercial and Services - About eight percent of the I-4 project corridor contains commercial uses. Linear commercial corridors (strip commercial areas) are characterized by linear concentrations of all types of commercial, office and institutional uses along a roadway. Linear commercial corridors exist at the US 98 (Segment 8) and US 27 (Segment 9) interchanges. The Lakeland Auto Auction is located north of I-4 at SR 33 (in Segment 4).

Industrial - A small percentage of the I-4 project corridor contains industrial uses, characterized by facilities for the processing, fabrication, manufacturing, recycling, and distribution of goods. An industrial area is located between Memorial Boulevard and Kathleen Road (in Segment 2).

Agricultural - About 40 percent of the I-4 project corridor contains active and passive agricultural uses. Agricultural areas exist north of I-4 from east of Tenth Street to west of US 98 (in Segment 2); a small agricultural area is located west of the Socrum Loop Road interchange (in Segment 3); agricultural uses dominate from east of SR 33 to the Polk/Osceola County line (Segments 4, 5, 6, 7 and 9).

Vacant and Undeveloped - About 40 percent of the I-4 project corridor contains vacant and undeveloped lands. Vacant areas are scattered from west of Memorial Boulevard to Mount Olive Road (Segments 2, 3, 4 and 8). High concentrations of vacant and undeveloped lands exist from west of CR 557 to west of US 27 in the area of the Green Swamp (Segment 6) and from east of US 27 to the Polk/Osceola County line in the area of the Davenport Swamp (Segment 7).

Recreation/Open Space - A small percentage of the I-4 project corridor contains recreation/open space areas. Recreation/open space areas exist south of I-4 at Memorial Boulevard (Segment 2) and SR 33 (Segment 3).

Existing Special Land Use Conditions -- Certain types of land uses are particularly important because of the special conditions surrounding them and the hardships involved in the relocation of such areas. Examples of this found adjacent to the project corridor are one school, four churches, one cemetery and one air strip. In addition, environmentally sensitive wetlands and wildlife habitat such as the Green Swamp between CR 557 and US 27 (Segment 6) and the Davenport Swamp between US 27 and the Polk/Osceola County line (Segment 7) are examples of sensitive land uses.

A significant portion of the I-4 corridor in northeastern Polk County traverses the Green Swamp, which has been designated as an Area of Critical State Concern (Segment 6). See Section 4.3.5 Wetlands and the Wetlands Evaluation Report, March 1998 for a detailed discussion regarding the Green Swamp.

Future Land Use -- The Polk County 2010 Future Land Use Maps, November 18, 1992; January 31, 1994; and October 4, 1994 show that residential land uses would replace agricultural land uses from Memorial Boulevard to Kathleen Road (in Segment 2) and the area from Kathleen Road to US 98 (in Segment 2) would become predominantly commercial. Residential land uses would continue to dominate from US 98 to SR 33 (Segment 3). From SR 33 to SR 559 (Segment 4) residential land uses would replace the agricultural uses and is an area also designated as a Regional Activity Center. The Green Swamp area

from CR 557 to US 27 (Segment 6) would remain as natural/agricultural/rural residential. The US 27 interchange area (Segment 9) would remain commercial. The area from US 27 to the Polk/Osceola County line (Segment 7) is shown as a Select-Area Plan on the Polk/Osceola future land use map.

The Bridgewater DRI is a mixed-use development approved for about 1,214 ha (3,000 ac) of property in the northeast section of the City of Lakeland. The property is owned by American Cyanamid Company/Bridgewater Associates, Inc., the DRI applicant, and lies along SR 33 north of Lake Parker. The majority of the property is situated on the south side of I-4 between the Socrum Loop Road and SR 33 interchanges with I-4 (see Figure 4-2, page 4-7). The DRI planning concept provides for three single-family communities and three multi-family tracts totaling 3,319 dwelling units. The plan also provides for a 95.5 ha (236 ac) tract (Bridgewater Center) in the southeast quadrant of the SR 33 interchange with a variety of office, commercial and industrial uses, including a 150 room hotel and highway commercial areas. Bridgewater Industrial Park is a 110 ha (272 ac) with industrial, office and retail space oriented primarily toward warehouse/distribution activities. Other commercial tracts totaling about 65 ha (161 ac) are planned for a retail mall complex, miscellaneous highway, neighborhood and convenience establishments.

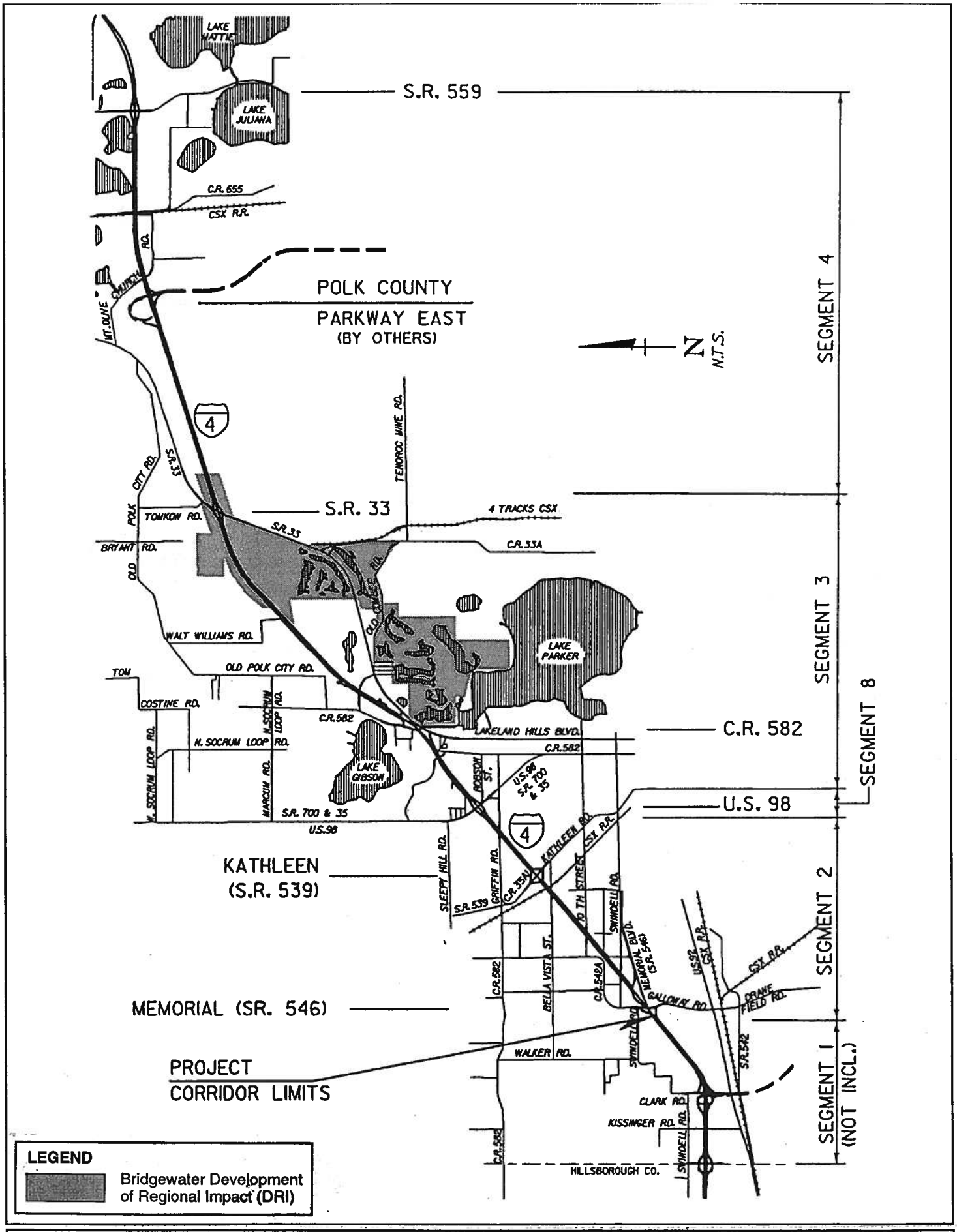
The proposed improvements to I-4 would utilize the existing corridor and land use is not anticipated to change significantly as a result of the improvements. It is predicted that with or without the I-4 improvements, land use changes would follow the normal transition from rural/agricultural to residential/commercial.

Project Consistency with Land Use Planning -- Coordination with the TPO, Polk County and City of Lakeland Planning Departments and the CFRPC throughout the PD&E study was undertaken to insure the project is consistent with planned land uses in the I-4 corridor through Polk County.

4.1.4 Utilities and Railroads

Utility and railroad issues are described below. Utilities cross the I-4 corridor at almost every interchange and grade separation, and one active railroad is present within the study area.

Utilities -- Major electrical transmission lines, water mains and cross-country communication cables parallel the corridor at several locations in close proximity to the existing right-of-way and may require relocation due to the proposed improvements to I-4. Approximate locations and relocations costs were obtained through coordination with the FDOT District Utility Engineer by sending each utility company a Utility Request Package. The following utility companies have facilities in the I-4 corridor:



APPROXIMATE BOUNDARIES OF BRIDGEWATER DRI	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 4-2

American Telecasting (CATV)
AT&T Communications (telephone)
Chesapeake Utilities Corps. (sanitary sewer)
Florida Power Corp. (electric)
Florida Gas Transmission (natural gas)
General Telephone of Florida
Lakeland Electric and Water
Lakeland Public Works (sanitary sewer)
LLDS Communications (telephone)
M.C.I. (telephone)
Orlando Utilities Commission (electric)
Peoples Gas System (natural gas)
Polk County Utilities (water and sanitary sewer)
Tampa Electric Company
Time Warner Cable (CATV)

The exact locations of these utility systems will be determined during subsequent design phases of the project and conflicts with these systems will be identified. A listing of known facilities and anticipated impacts with the preferred alternative are discussed in detail in Sections 4.1.12 and 9.16 of the Preliminary Engineering Report, June 1998, Revised August 1998.

The utility locations and associated relocation costs were considered during the alternatives analysis process and the selection of the preferred alternative. The total estimated major utility relocation cost associated with the preferred alternative is about $16,965,000. Of this total, it is anticipated the FDOT would bear about $5,725,000 of the relocation costs and the remaining $11,240,000 would be borne by the utility companies or municipalities.

Railroads -- One functioning north-south rail crossing of I-4 occurs within the study area about 0.4 km (0.25 mi) west of Kathleen Road at I-4 MP 4.862. This is a grade separation crossing (railroad over I-4) with one track and 13 train movements per day at a maximum speed of 127 kph (79 mph). The rail bridge over I-4 would be replaced to accommodate the proposed wider typical section. In order to minimize disruption to train traffic, the replacement bridge would be constructed immediately adjacent to and west of the existing bridge within the existing railroad right-of-way. The replacement of this structure would introduce two sets of flat reverse curves into the railroad alignment requiring transitions to the existing alignment about 1.6 km (1 mi) north and south of I-4 in order to maintain the existing train speeds. This railroad bridge replacement concept has been coordinated with the CSX Railroad through the FDOT District Railroad Coordinator.

A former railroad crossing lies immediately west of and parallel to CR 655 at I-4 MP 16.922. This is a grade separation with I-4 over the former railroad right-of-way and CR 655. The tracks in this location have been abandoned and the right-of-way was sold to Tampa Electric Company in 1993. CSX Railroad retained an easement through the former right-of-way which currently contains a fiber optic cable owned by M.C.I. This former railroad right-of-way is being considered for an extension of a Rails-to-Trails project, which currently ends about 0.8 km (0.5 mi) north of I-4; however, funding sources have put that project on indefinite hold.

4.1.5 Relocations

A Conceptual Stage Relocation Plan, January 26, 1998, was developed by the FDOT for this project in accordance with Florida Statutes, Chapter 339.09, the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Public Law 91-646). The residential and business relocations and costs associated with the preferred alternative are shown in Table 4-2.

Table 4-2
PREFERRED ALTERNATIVE
RELOCATIONS AND BUSINESS DAMAGES
I-4 Project Development and Environment Study

Project Segment	Residential Relocations	Business Relocations	Business Damages	Relocation Cost [1]	Total Cost
2	6	0	$0	$88,000	$88,000
8	10	1	$50,000	$206,000	$256,000
3	0	0	$0	$0	$0
4	4	0	$0	$59,000	$59,000
5	0	1	$50,000	$59,000	$109,000
6	0	0	$0	$0	$0
9	0	4	$260,000	$236,000	$496,000
7	0	0	$0	$0	$0
Totals	**20**	**6**	**$360,000**	**$648,000**	**$1,018,000**

[1] Relocation cost includes signage, personal property and other miscellaneous relocation costs.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, the FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

The FDOT provides advance notification of impending right-of-way acquisition. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

No person lawfully occupying real property will be required to move without at least 90 days written notice of the intended vacation date and no occupant of a residential property will be required to move until decent, safe, and sanitary replacement housing is made available. "Made available" means that the affected persons has either by himself obtained and has the right of possession of replacement housing, or that the FDOT has offered the relocatee decent, safe, and sanitary housing which is within his financial means and available for immediate occupancy.

At least one relocation specialist is assigned to each highway project to carry out the relocation assistance and payments program. A relocation specialist will contact each person to be relocated to determine individual needs and desires, and to provide information, answer questions, and give help in finding

replacement property. Relocation services and payments are provided without regard to race, color, religion, sex or national origin.

Financial assistance is available to the eligible relocatee to:

1. Reimburse the relocatee for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project;
2. Make up the difference, if any, between the amount paid for the acquired dwelling and the cost of a comparable decent, safe, and sanitary dwelling available on the private market;
3. Provide reimbursement of expenses, incidental to the purchase of a replacement dwelling;
4. Make payment for eligible increased interest cost resulting from having to get another mortgage at a higher interest rate. Replacement housing payments, increased interest payments, and closing costs are limited to $22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed $5,250, to rent a replacement dwelling or room, or to use as a down payment, including closing costs, on the purchase of a replacement dwelling. The brochures which describe in detail the FDOT's relocation assistance program and right-of-way acquisition program are "Your Relocation: Residential", "Your Relocation: Businesses, Farms and Nonprofit Organizations", "Your Relocation: Signs" and "The Real Estate Acquisition Process". All of these brochures are distributed at all public hearings and made available upon request to any interested persons.

Comparable replacement housing for sale and rent is available along the I-4 corridor. However, there may be some last resort rent supplements and last resort replacement housing payments necessary. Last resort housing payments would be used in order to place the relocatees in decent, safe, and sanitary housing, if necessary. Should last resort housing be constructed, the housing would be available before the displacees are required to vacate their dwellings. There are numerous residential lots available for new construction within the I-4 corridor. Lots range in size from 8,400 square feet to 24,700 square feet and are priced from $50,000 to $ 100,000.

In response to comments received from the public at the Public Hearings held for this project on October 12 and 13, 1998, the PD&E concept for the US 27 interchange has been subsequently refined to avoid the taking of 3 businesses - McDonalds, Wendys and New York Pizza World restaurants. The concept plans shown at the public hearing indicated that relocating the frontage road would impact the above three restaurants. This concept change results in avoiding the taking of McDonalds and New York Pizza World, and minimizing the right-of-way taking from Wendys. For more information regarding the Public Hearings, refer to the Comments and Coordination Report, November 1998.

4.2 Cultural and Historical Resources

Historic and archaeological studies were performed to assess this project for potential impacts. Section 4(f) properties (recreation and parkland resources) were also identified during this PD&E study. Each topic is addressed in this section.

4.2.1 Archaeological and Historical Resources

In accordance with the procedures contained in 36 CFR, Part 800, a Cultural Resource Assessment, including background research and a field survey coordinated with the State Historic Preservation Officer (SHPO), was performed for the project. As a result of the assessment, no sites were identified which were determined eligible for listing on the National Register of Historic Places (NRHP) (see Appendix D). Based on the fact that no additional archaeological or historical sites or properties are expected to be encountered during subsequent project development, the Federal Highway Administration has determined that no NRHP properties would be impacted.

Historical Survey -- A total of eight historic structures, including one previously recorded property (iPO1549), was identified and evaluated along the I-4 project corridor. Relevant site information is summarized in Table 4-3.

Table 4-3
HISTORIC STRUCTURES RECORDED WITHIN THE I-4 PROJECT STUDY AREA
I-4 Project Development and Environment Study

Site No.	Segment	Address	Date	Style
8PO4057	3	3408 Dale Drive	1940	FV
8PO4612	3	743 Crevasse Street	1940	FV
8PO4059	3	623 Union Drive	1930	FV
8PO4060	3	505 Union Drive	1920	FV
8PO1549	3	Carpenters Way	*ca.* 1925	MR
8PO4056	3	4000 N. Florida Avenue	1925	CR
8PO4061	3	6925 Walter Williams Road	1925	FV
8PO4062	4	Auburndale Road	1920	B

Legend: Style types - FV = Frame Vernacular; MR = Mediterranean Revival; CR = Craftsman; B = Bungalow

In general, the majority of historic structures recorded are located within Segment 3. Included are six residences constructed between 1920 and 1940, and one historic structure, a gateway arch originally associated with the United Brotherhood of Carpenters and Joiners Retirement Home, constructed circa 1925. The main buildings of the original Carpenter's Home complex are well outside the project impact zone. The remaining historic structure identified is a Bungalow style residence located within Segment 4. No historic properties were identified within Segments 2, 5, 6, 7, 8, and 9. None of the historic structures identified meet the criteria for listing in the NRHP.

Archaeological Survey -- Archaeological field survey entailed both ground surface reconnaissance and the excavation of a total of 930 subsurface shovel tests. Of these, 604 were excavated systematically at 20 m (82 ft) intervals in zones of high archaeological probability within the I-4 study area and 217 in the areas of moderate probability at 50 m (164 ft) intervals. In addition, 109 test pits were excavated systematically and judgmentally both within and adjacent to theproject study area in order to bound the sites discovered as a result of the surface reconnaissance and subsurface testing, as well as to sample other selected areas not included in the high and moderate probability zones.

As a result of the field survey, a total of 23 archaeological sites were found to be within the I-4 study area (see Table 4-4). Three sites are within Segment 2, four within Segment 3, six within Segment 4, seven within Segment 5 and one each within Segments 6, 7 and 8. Of these, 13 are newly discovered; 10 previously recorded sites were also found to be located, at least in part, within the project area. The majority of these sites are classified as lithic scatters and artifact scatters; a few single artifact sites were also found. All are commonly occurring types of sites for the region, and are considered to have limited research potential. None are eligible for listing in the NRHP.

Table 4-4
SUMMARY OF ARCHAEOLOGICAL SITES LOCATED WITHIN THE I-4 PROJECT STUDY AREA
I-4 Project Development and Environment Study

Site No.	Segment	T/R/S	Quad Map	Site Type	Comments
8PO4108	2	28/23/16	Plant City East	SA	New
8PO4105	2	28/23/16	Plant City East	LS	New
8PO4104	2	28/23/16	Plant City East	LS	New
8PO4107	8	28/23/36	Lakeland	LS	*(a)
8PO4106	3	27/23/36	Lakeland	SA	New
8PO4100	3	28/24/31	Lakeland	AS	*(b)
8PO4101	3	27/24/31	Lakeland	LS	*(b)
8PO4103	3	28/24/30	Lakeland	SA	*(b)
8PO111	4	26/25/7	Polk City	HC	*(c)
8PO4109	4	27/25/4	Polk City	AS	New
8PO4113	4	27/25/4	Polk City	LS	New/*(d)
8PO4111	4	27/25/4	Polk City	LS	New/*(d)
8PO4114	4	27/25/4	Polk City	LS	New/*(d)
8PO4115	4	27/25/3	Polk City	SA	New

Site No.	Segment	T/R/S	Quad Map	Site Type	Comments
8PO2254	5	27/25/3	Polk City	AS	*(e)
8PO2255	5	27/25/2	Polk City	AS	*(e)
8PO2256	5	27/25/2	Polk City	AS	*(e)
8PO4116	5	27/25/2	Polk City	LS	New
8PO4117	5	27/25/1	Polk City	LS	New
8PO4042	5	26/25/36	Polk City	AS	*(f)
8PO2257	5	26/26/28	Gum Lake	LS	*(e)
8PO4118	6	26/26/28	Gum Lake	LS	New
8PO4119	7	26/27/5	Gum Lake	SA	New

Legend:
Style Type - SA = Single Artifact; LS = Lithic Scatter; HC = Historic Camp; AS = Artifact Scatter
Comments - *(a) = originally discovered by Janus Research during US 98/I-4 Interchange Survey
*(b) = originally discovered and recorded by Janus Research during I-4 Ponds project (Estabrook 1994)
*(c) = previously documented by Haviser (1982) and Browning (1989)
*(d) = may be part of 8PO3991 recorded by Clagett in 1994 (FSF)
*(e) = originally discovered and recorded by Janus Research during Bifurcated Median Areas project (Estabrook 1991)
*(f) = originally discovered and recorded by ACI during I-4 Ponds project (Almy 1994b)

For further information regarding archeological and historic sites, refer to the Cultural Resources Assessment Survey, February 1995.

4.2.2 Recreational and Parkland Resources

There are no Section 4(f) recreational or parkland resources that will be impacted by the preferred alternative proposed improvements to I-4.

There is one Section 4(f) site within the I-4 corridor thatcould be affected by the proposed improvements to I-4 if the widening were to take place to the left (north) in the area of the school. Widening I-4 to the north would impact the Wendell Watson Elementary School property by causing Walt Williams Road to be relocated into the property. A portion of the open athletic field and the wastewater treatment plant on the southwest corner of the property would be affected. A Section 4(f) Determination of Applicability (DOA) was submitted for the Wendell Watson Elementary School describing various possible widening scenarios (typical sections and alignments). After review of the DOA, on March 22, 1993, the FHWA determined that the provisions of Section 4(f) do not apply to the Wendell Watson Elementary School, stating that "...no right-of-way will be acquired under the preferred Alternate 3, and constructive use is not expected to significantly diminish the school's vital functions." The Alternate 3 described in the Wendell Watson Elementary School DOA is the preferred alternative 91.4 m (300 ft) urban interstate

typical section centered within the existing right-of-way. The FHWA response letter dated March 22, 1993 is included in Appendix E. A description of the Wendell Watson Elementary School is provided below.

Wendell Watson Elementary School, at 6800 Walt Williams Road, is ownedby the Polk County School Board, and is north of I-4 about 2.7 km (1.7 mi) east of Old Combee Road in Section 17, Township 26 South, Range 24 East (Segment 3) and is shown on Figure 4-1, page 4-2.

The property for the school was acquired by Polk County in 1990. The property was a former homestead with no public access or facilities. School facilities include an open athletic field with a perimeter fence; basketball courts; two baseball/softball fields; vehicle parking andthree classroom buildings. The school property occupies approximately 8.1 ha (20 ac) and is accessible to automobiles and pedestrians from Walt Williams Road.

The nearest facilities with comparable resources are about 3.2 km (2.0 mi) to the west. Padgett Elementary School, Lake Gibson Junior High School, Lake Gibson High School and Virgil Ramage Stadium, all located west of Wendell Watson Elementary School on North Socrum Loop Road to the north of I-4. North Lakeland Elementary School is about 4.2 km (2.6 mi) to the southwest, south of I-4 and west of County Road 582.

No off-site improvements, including construction of stormwater retention/detention areas, will be recommended or approved without further analysis of Section 4(f) lands involvement. For more information, refer to the Wendell Watson Elementary School Section 4(f) Determinationof Applicability Report, accepted by the FHWA on March 22, 1993.

4.3 Natural and Physical Impacts

Impacts to the natural and physical environment are discussed in this section. Each topic in this section describes the impacts of the proposed improvements to I-4.

4.3.1 Pedestrian and Bicycle Facilities

The I-4 corridor is a limited access interstate facility. State Statute prohibits non-motorized (bicycle and pedestrian) traffic on the mainline of I-4 and the entrance and exit ramps. Bicycle and pedestrian accommodations would be provided on the non-interchange cross road grade separations and on the cross roads at interchanges. The types of proposed pedestrian and bicycle accommodations at the cross roads are shown in Table 4-5.

Table 4-5
PEDESTRIAN AND BICYCLE ACCOMMODATIONS
I-4 Project Development and Environment Study

Location	Type of Accommodations	
	Pedestrian	Bicycle
Swindell Road Bridge	2.4 m (8 ft) Sidewalks	3.0 m (10 ft) Paved Shoulders
Tenth Street Bridge	2.4 m (8 ft) Sidewalks	3.0 m (10 ft) Paved Shoulders
Bella Vista Street Bridge	1.5 m (5 ft) Sidewalks	3.0 m (10 ft) Paved Shoulders
Kathleen Road Bridge	1.5 m (5 ft) Sidewalks	1.2 m (4 ft) Bike Lanes
Griffin Road Bridge	1.5 m (5 ft) Sidewalks	1.2 m (4 ft) Bike Lanes
US 98 Underpass	2.4 m (8 ft) Sidewalks	1.2 m (4 ft) Bike Lanes
Carpenter's Way Road Bridge	None	3.0 m (10 ft) Paved Shoulders
Socrum Loop Road Underpass	1.8 m (6 ft) Sidewalks	1.2 m (4 ft) Bike Lanes
Old Combee Road Bridge	1.8 m (6 ft) Sidewalks	1.2 m (4 ft) Bike Lanes
SR 33 Underpass	None	3.0 m (10 ft) Paved Shoulders
Mt. Olive Road Bridge	None	3.0 m (10 ft) Paved Shoulders
CR 655 Overpass	None	1.5 m (5 ft) Paved Shoulders
SR 559 Underpass	1.8 m (6 ft) Sidewalks	1.2 m (4 ft) Bike Lanes
CR 557A Bridge	None	3.0 m (10 ft) Paved Shoulders
CR 557 Bridge	None	3.0 m (10 ft) Paved Shoulders
US 27 Bridges	1.5 (5 ft) Sidewalks	1.2 m (4 ft) Bike Lanes
CR 54 Bridge	None	3.0 m (10 ft) Paved Shoulders

Cross walks with curb cut ramps for handicapped access would be provided at the signalized intersections of the I-4 entrance and exit ramp termini at Kathleen Road, US 98, CR 582 and SR 559 within the interchange areas.

4.3.2 Visual and Aesthetics

This project would be designed in accordance with the "Aesthetic Guidelines for I-4 Corridor", June 1996. The guidelines require this project comply with Level Two of Section 3.D.2.b of the FDOT Structures Design Guidelines, Levels of Aesthetics with the exception of the US 27 interchange which will comply with the Level Three guidelines.

During preparation of the guidelines, coordination with Polk County and the City of Lakeland was initiated to solicit local government input towards the aesthetic appearance of the proposed I-4 improvements. The City of Lakeland expressed a desire for the five Lakeland interchanges (Memorial Boulevard, Kathleen Road, US 98, CR 582, and SR 33) to be attractive gateways to the City of Lakeland. The four areas for which input was solicited were bridges, retaining walls, signing and lighting supports, and landscaping (particularly at interchanges).

Adherence to the Aesthetic Guidelines for the I-4 corridor would make the improved roadway aesthetically pleasing to both the road user and the properties with a view of the road. Impacts to the vista of the I-4 corridor as a result of the proposed improvements are considered minimal. The goal of the Aesthetic Guidelines for the I-4 Corridor is "to provide uniformity through the corridor with emphasis on providing harmony with the adjacent land use and local community." The following recommendations are included in the guidelines:

1. Extensive use of retaining walls through the 16.1 km (10.0 mi) urban section (Segments 2, 8 and 3) and for all reinforced earth type bridge abutments within the corridor will be enhanced by using a consistent gray fractured fin wall texturing and a Navajo white cap.

2. Bridge piers will generally be T-type, with octagonal columns which extend through trapezoidal concrete caps. Column faces will be finished with fractured fin texturing to match retaining walls and abutments.

3. Understructure lighting will have recessed, non-corrosive fixtures having no exposed conduits or brackets.

4. Bridge superstructures will consist of parallel prestressed concrete girders for tangent alignments and steel girders for long spans and curved alignments.

5. Multilevel interchanges will utilize box girder superstructures (curved where required to accommodate ramp alignments).

6. Xeriscape landscaping will be provided to "announce" interchanges and within interchanges to enhance the visual quality of the ramps and grade separation structures.

7. All sign supports, signal poles, fencing and lighting will be finished in glossy, powder black finish.

4.3.3 Air Quality

An air quality study was conducted for the I-4 PD&E study in order to determine whether the project would cause or contribute to an exceedance of the National Ambient Air Quality Standard (NAAQS) for carbon monoxide. The U.S. Environmental Protection Agency's (USEPA) CAL3QHC intersection dispersion model and MOBILE5, a motor vehicle emissions model were used. Using these models, the generation and dispersion of emissions from both free flow and queuing motor vehicles was analyzed. Free flow emissions are those attributable to moving motor vehicles and queued emissions are those associated with stopped, or idling, motor vehicles.

The microscale analysis is designed to simulate "worst-case" meteorological conditions. In addition, to insure that "worst-case" results are obtained, the microscale analysis is conducted for the area within the project corridor forecast to have a combination of the heaviest traffic volume, lowest vehicular speed and closest air quality sensitive sites (receptors). The premise of this approach is that carbon monoxide concentrations elsewhere along the project corridor will be lower when compared to this "worst-case" location. Using traffic data prepared for the project, the I-4/US 98 interchange was selected for the

analysis. Material in support of the selection and further details on the methodology can be found in the Appendix of the Air Quality Report, Revised August 1998.

Traffic data was obtained from the Traffic Technical Memorandum - Interstate 4, July 1995. Future land use data was obtained from 2010 Future Land Use, Polk County, Florida 1994, March 24, 1994 (Updated March 1997 and February 1998). The air quality analyses were performed in August 1995.

Results of the air quality analysis indicate that the project will not cause or contribute to the NAAQS for carbon monoxide with or without the proposed I-4 improvements. Construction of the proposed project would have a temporary impact on air quality conditions in the vicinity of the roadway during site preparation. Particulate matter (dust) would cause the greatest impact. Where excess particulate matter is likely to become a problem, the contractor will adhere to the 1991 FDOT Standard Specifications for Road and Bridge Construction and any special provisions in the construction contract which relate to the control of air pollution.

The project is in an area that has been designated as attainment for ozone standards under the criteria provided in the Clean Air Act. This project is in conformance with the State Implementation Plan because it will not cause violations of the NAAQS.

4.3.4 Noise

A Noise Study Report, Revised August 1998, was prepared as part of the PD&E study. A total of 933 existing and planned sensitive sites were identified adjacent to the I-4 corridor as having the potential to be impacted by motor vehicle-related noise with the proposed improvements. These sites include single and multi-family residences, two elementary schools and four churches. Of the 933 sites, 380 are predicted to experience existing and future (year 2021) no build noise levels that may approach or exceed (65 to 73 dBA) the Federal Highway Administration's (FHWA) Noise Abatement Criteria (NAC). With the I-4 improvements, 626 sites are predicted to experience noise levels that may approach or exceed (65 to 79 dBA) the NAC during 2021. As required by the FHWA, abatement measures were considered for all of the sites predicted to be impacted by noise with the proposed improvements. These measures were traffic management, roadway alignment alternatives and the construction of noise barriers within the project's right-of-way.

- Traffic Management - Measures which limit motor vehicle speeds, reduce volumes and prohibit trucks can be effective noise mitigation measures. However, due to the nature of the facility and the capacity constraints caused by such measures, traffic management is not considered a feasible or reasonable mitigation measure for the project.

- Roadway Alignment Alternatives - The preferred construction alternative generally utilizes the existing right-of-way for I-4. Further shifts in the roadway would increase impacts unrelated to noise to the businesses and residences currently located adjacent to the roadway. While considered to be feasible, this measure is considered to be unreasonable to mitigate predicted noise impacts.

- Noise Barriers - Noise barriers were evaluated at 27 locations adjacent to the improved I-4 roadway. To be effectual in reducing traffic noise impacts, a noise barrier must be relatively long (for the I-4 improvements, the total length of an effective barrier ranges from 8 to 12 times the distance from the receiver to the source), continuous (with no intermittent openings), and sufficiently high to provide

a reasonable reduction in noise levels. When noise barriers are evaluated, a minimum average sound level reduction (insertion loss) of 5 dBA is required with an average 10 dBA insertion loss being the desired. To be considered benefitted, the FDOT guidelines indicate that the noise level at a receiver must be reduced by at least 5 dBA when compared to noise levels without a noise barrier. This guideline insures that a majority of the impacted sites receive a sufficient reduction in noise to warrant the additional project-related expenditure for the barrier.

Noise barriers must be economically reasonable. The FDOT has established cost guidelines which indicate that the approximate funds to be expended for noise abatement are $30,000 per benefitted receiver. The current FDOT estimated cost to construct a noise barrier (materials and labor) is $215.28 per square meter ($20.00 per square ft).

The results of the evaluation (see Table 4-6) indicate that the minimum desired reduction in noise (5 decibels) cannot be achieved at 3 of the locations, the cost effective guideline ($30,000 per benefitted receiver) is significantly exceeded at 21 locations. As such, noise barriers are not considered a reasonable noise abatement measure at 24 of the 27 locations evaluated.

Barrier 6 was evaluated for 15 of the noise sensitive sites. At this location (south of I-4 and east of West 10th Street), the existing average noise level is 70 dBA. During 2021 with the project, average noise levels are predicted to be 74 dBA--an increase of 4 dBA over existing conditions. As shown on Table 4-1, a cost effective barrier could be constructed which would provide an average 7 dBA insertion loss for the 15 sites at this location. The barrier, 518.2 m (1700 ft) long and 3.7 m (12 ft) in height, would cost an estimated $408,000 or $29,000 per benefitted site. Noise levels are predicted to increase 4 dBA over existing conditions and levels are predicted to be 7 dBA over the NAC with the project. A noise barrier has been evaluated which would provide more than the minimum desired reduction in noise at an effective cost. It is recommended that a noise barrier at this location be further evaluated in the subsequent design phase of this project.

Barrier 7 was evaluated for 34 of the sites. At this location (southwest of the I-4/Kathleen Road (SR 539) Interchange), the existing average noise level is 66 dBA. During 2021 with the project, average noise levels are predicted to be 68 dBA-an increase of 2 dBA over existing conditions. The results of the analysis indicate that a barrier 457.2 m (1500 ft) in length and 7.9 m (26 ft) in height may reduce noise levels an average 7 dBA at a cost below the cost effective guideline ($27,000 per benefitted receiver). It is recommended that a noise barrier at this location be further evaluated in the subsequent design phase of this project.

Barrier 15 was evaluated for 40 of the noise sensitive sites. At this location (south of SR 33 between Socrum Loop Road and Old Combee Road), the existing average noise level is 65 dBA. During 2021 with the project, the average noise level is predicted to be 66 dBA. The results of the analysis indicate that a barrier 883.9 m (2900 ft) in length and 4.3 meters (14 ft) in height may reduce noise levels an average 10 dBA at a cost below the cost effective guideline ($20,000 per benefitted receiver). It is recommended that a noise barrier at this location be further evaluated in the subsequent design phase of this project.

An additional objective of the Noise Study is the prediction of noise impact "zones" adjacent to the improved I-4 corridor. This information is provided to assist local officials in planning development so that future noise sensitive sites within the "zones" are minimized. These "zones" delineate the distance from the centerline of the improved roadway's near travel lane where the FDOT "approach" criteria (65 dBA) for the FHWA NAC level for category "B" land uses is estimated to occur with the proposed project. Generally, the results of this analysis indicate that local planning officials should strive to maintain a 198.1 to 213.3 meter (m) (650 to 700 foot (ft)) buffer zone adjacent to the improved I-4 corridor. Land uses within this zone should be compatible with highway noise (commercial, industrial, etc).

Construction of the proposed project will have a temporary impact on the noise sensitive sites adjacent to the project corridor. The contractor will adhere to the 1991 FDOT Standard Specifications for Road and Bridge Construction and any special provisions in the construction contract which relate to the control of noise.

Noise Study Addendum

In response to comments received from the public at the Public Hearings held for this project on October 12 and 13, 1998, the noise walls identified as Barriers 2, 11, 16 and 17 in the Noise Study Report for I-4 were reevaluated using more refined data than was available during the previous analysis. The noise walls were also modified in these areas in an attempt to achieve the minimum desired insertion loss for the more densely situated noise sensitive sites in each area. The addendum (Section 8.0 of the Noise Study Report, March 1998, Revised August 1998) presents the results of the reevaluation.

Table 4-6
SUMMARY OF BARRIER ANALYSIS
I-4 Project Development and Environment Study

Barrier No.	No. of Impacted Sites	Average dBA		Increase/ Decrease From Existing	Build Average over NAC (65 dBA)	Barrier Description				No. of Benefitted Receivers	Cost Per Benefitted Receiver	Cost Effective
		Existing-No-Project	Build			Average Insertion Loss	Length	Height	Cost			
1	10	66	67	+1	N	4 (Max)	426.7 m (1400 ft)	10.4 m (34 ft)	$950,000	3	$320,000	N
2	44	68	69	+1	Y (4 dBA)	5	975.4 m (3200 ft)	4.3 m (14 ft)	$896,000	16	$56,000	N
						8	975.4 m (3200 ft)	6.7 m (22 ft)	$1,408,000	38	$37,000	N
						10	975.4 m (3200 ft)	9.8 m (32 ft)	$2,048,000	43	$47,500	N
3	16	67	70	+3	Y (5 dBA)	5	1036.3 m (3400 ft)	4.3 m (14 ft)	$952,000	6	$158,500	N
						8	1036.3 m (3400 ft)	7.3 m (24 ft)	$1,632,000	14	$116,500	N
						10	1036.3 m (3400 ft)	10.4 m (34 ft)	$2,312,000	14	$165,000	N
4	3	64	66	+2	N	5	426.7 m (1400 ft)	7.9 m (26 ft)	$728,000	2	$364,000	N
						6 (Max)	426.7 m (1400 ft)	10.4 m (34 ft)	$952,000	3	$317,000	N
5	32	66	69	+3	Y (4 dBA)	6	1371.6 m (4500 ft)	4.3 m (14 ft)	$1,260,000	20	$63,000	N
						8	1371.6 m (4500 ft)	6.7 m (22 ft)	$1,980,000	30	$66,000	N
						10	1371.6 m (4500 ft)	10.4 m (34 ft)	$3,060,000	31	$98,700	N

Table 4-6 (Continued)
SUMMARY OF BARRIER ANALYSIS
I-4 Project Development and Environment Study

Barrier No.	No. of Impacted Sites	Average dBA		Increase/ Decrease From Existing	Build Average over NAC (65 dBA)	Barrier Description				No. of Benefitted Receivers	Cost Per Benefitted Receiver	Cost Effective
		Existing-No-Project	Build			Average Insertion Loss	Length	Height	Cost			
6	15	70	74	+4	Y (9 dBA)	5	518.2 m (1700 ft)	3.0 m (10 ft)	$340,000	7	$48,500	N
						7	518.2 m (1700 ft)	3.7 m (12 ft)	$408,000	14	$29,000	Y
						10	518.2 m (1700 ft)	6.1 m (20 ft)	$680,000	15	$45,000	N
7	34	66	68	+2	Y (3 dBA)	5	457.2 m (1500 ft)	5.5 m (18 ft)	$540,000	20	$27,000	Y
						7	457.2 m (1500 ft)	7.9 m (26 ft)	$780,000	29	$27,000	Y
						9 (Max)	457.2 m (1500 ft)	10.4 m (34 ft)	$1,020,000	29	$35,100	N
8	1	63	65	+2	N	6 (Max)	365.8 m (1200 ft)	9.1 m (30 ft)	$720,000	1	$720,000	N
9	10	66	68	+3	Y (3 dBA)	5	762.0 m (2500 ft)	4.3 m (14 ft)	$700,000	3	$233,000	N
						8	762.0 m (2500 ft)	6.7 m (22 ft)	$1,100,000	9	$122,000	N
						10	762.0 m (2500 ft)	8.5 m (28 ft)	$1,400,000	9	$156,000	N
10	5	68	72	+4	Y (7 dBA)	5	823.0 m (2700 ft)	4.3 m (14 ft)	$667,000	3	$252,000	N
						7	823.0 m (2700 ft)	5.5 m (18 ft)	$858,000	4	$243,000	N
						10	823.0 m (2700 ft)	7.3 m (24 ft)	$1,144,000	5	$259,000	N

Table 4-6 (Continued)
SUMMARY OF BARRIER ANALYSIS
I-4 Project Development and Environment

Barrier No.	No. of Impacted Sites	Average dBA		Increase/ Decrease From Existing	Build Average over NAC (65 dBA)	Barrier Description				No. of Benefitted Receivers	Cost Per Benefitted Receiver	Cost Effective
		Existing-No-Project	Build			Average Insertion Loss	Length	Height	Cost			
11	62	65	68	+3	Y (3 dBA)	5	1432.6 m (4700 ft)	5.5 m (18 ft)	$1,692,000	21	$80,500	N
						8	1432.6 m (4700 ft)	7.3 m (24 ft)	$2,256,000	52	$43,000	N
						10	1432.6 m (4700 ft)	9.1 m (30 ft)	$2,820,000	55	$51,000	N
12	14	67	70	+3	Y (5 dBA)	5	487.7 m (1600 ft)	5.5 m (18 ft)	$576,000	8	$72,000	N
						8	487.7 m (1600 ft)	7.9 m (26 ft)	$832,000	13	$64,000	N
						10	487.7 m (1600 ft)	10.4 m (34 ft)	$1,088,000	13	$83,500	N
13	12	65	67	+2	Y (2 dBA)	5 (Max)	975.4 m (3200 ft)	10.4 m (34 ft)	$2,176,000	2	$1,088,000	N
14	62	67	69	+2	Y (4 dBA)	5	1097.3 m (3600 ft)	4.3 m (14 ft)	$1,008,000	21	$48,000	N
						8	1097.3 m (3600 ft)	6.7 m (22 ft)	$1,584,000	31	$51,000	N
						10	1097.3 m (3600 ft)	8.5 m (28 ft)	$2,016,000	35	$57,500	N
15	41	65	66	+1	Y (1 dBA)	5	883.9 m (2900 ft)	2.1 m (7 ft)	$406,000	41	$10,000	Y
						8	883.9 m (2900 ft)	3.0 m (10 ft)	$580,000	41	$14,000	Y
						10	883.9 m (2900 ft)	4.3 m (14 ft)	$812,000	41	$20,000	Y

Table 4-6 (Continued)
SUMMARY OF BARRIER ANALYSIS
I-4 Project Development and Environment

Barrier No.	No. of Impacted Sites	Average dBA		Increase/ Decrease From Existing	Build Average over NAC (65 dBA)	Barrier Description				No. of Benefitted Receivers	Cost Per Benefitted Receiver	Cost Effective
		Existing-No-Project	Build			Average Insertion Loss	Length	Height	Cost			
16	68	66	70	+4	Y (5 dBA)	5	2590.8 m (8500 ft)	4.3 m (14 ft)	$2,380,000	38	$62,500	N
						8	2590.9 m (8500 ft)	5.5 m (18 ft)	$3,060,000	61	$54,000	N
						10	2590.0 m (8500 ft)	6.7 m (22 ft)	$3,740,000	65	$57,500	N
17	146	66	69	+3	Y (4 dBA)	5	4034.3 m (13200 ft)	4.3 m (14 ft)	$3,696,000	72	$51,000	N
						7	4034.3 m (13200 ft)	6.1 m (20 ft)	$5,280,000	112	$47,000	N
						10	4034.3 m (13200 ft)	7.9 m (26 ft)	$6,864,000	143	$48,000	N
18	3	66	70	+4	Y (5 dBA)	5	807.7 m (2650 ft)	4.9 m (16 ft)	$848,000	2	$424,000	N
						7	807.7 m (2650 ft)	6.7 m (22 ft)	$1,166,000	2	$583,000	N
						10	807.7 m (2650 ft)	7.9 m (26 ft)	$1,378,000	2	$459,000	N
19	1	65	69	+4	Y (4 dBA)	5	731.5 m (2400 ft)	4.9 m (16 ft)	$768,000	1	$768,000	N
						7	731.5 m (2400 ft)	7.3 m (24 ft)	$1,152,000	1	$1,152,000	N
						10	731.5 m (2400 ft)	8.5 m (28 ft)	$1,344,000	1	$1,344,000	N

Table 4-6 (Continued)
SUMMARY OF BARRIER ANALYSIS
I-4 Project Development and Environment

Barrier No.	No. of Impacted Sites	Average dBA		Increase/ Decrease From Existing	Build Average over NAC (65 dBA)	Barrier Description				No. of Benefitted Receivers	Cost Per Benefitted Receiver	Cost Effective
		Existing-No-Project	Build			Average Insertion Loss	Length	Height	Cost			
20	29	65	70	+5	Y (5 dBA)	5	792.5 m (2600 ft)	4.3 m (14 ft)	$728,000	9	$81,000	N
						8	792.5 m (2600 ft)	7.3 m (24 ft)	$1,248,000	28	$44,500	N
						10	792.5 m (2600 ft)	8.5 m (28 ft)	$1,456,000	29	$50,000	N
21	2	66	69	+3	Y (4 dBA)	3 (Max)	182.9 m (600 ft)	10.4 m (34 ft)	$408,000	0	N/A	N
22	2	67	71	+4	Y (6 dBA)	5	213.4 m (700 ft)	4.3 m (14 ft)	$196,000	1	$196,000	N
						7	213.4 m (700 ft)	7.3 m (24 ft)	$336,000	2	$168,000	N
						10	213.4 m (700 ft)	10.4 m (34 ft)	$476,000	2	$238,000	N
23	6	65	68	+3	Y (3 dBA)	5	548.6 m (1800 ft)	4.9 m (16 ft)	$576,000	3	$192,000	N
						7	548.6 m (1800 ft)	7.3 m (24 ft)	$864,000	4	$216,000	N
						8 (Max)	548.6 m (1800 ft)	10.4 m (34 ft)	$1,224,000	4	$306,000	N
24	3	65	65	0	N	N[a]						

Table 4-6 (Continued)
SUMMARY OF BARRIER ANALYSIS
I-4 Project Development and Environment

Barrier No.	No. of Impacted Sites	Average dBA		Increase/ Decrease From Existing	Build Average over NAC (65 dBA)	Barrier Description				No. of Benefitted Receivers	Cost Per Benefitted Receiver	Cost Effective
		Existing-No-Project	Build			Average Insertion Loss	Length	Height	Cost			
25	2	65	69	+4	Y (4 dBA)	6	548.6 m (1800 ft)	6.1 m (20 ft)	$720,000	2	$360,000	N
						8	548.6 m (1800 ft)	7.9 m (26 ft)	$936,000	2	$468,000	N
						10	548.6 m (1800 ft)	9.8 m (32 ft)	$1,152,000	2	$576,000	N
26	4	63	65	+2	N	5	457.2 m (1500 ft)	9.1 m (30 ft)	$900,000	2	$450,000	N
						6 (Max)	457.2 m (1500 ft)	10.4 m (34 ft)	$1,020,000	2	$510,000	N
27	2	62	65	+3	N	6	335.3 m (1100 ft)	4.9 m (16 ft)	$352,000	2	$176,000	N
						10	335.3 m (1100 ft)	10.4 m (34 ft)	$748,000	2	$374,000	N

a Due to the elevation of receivers with respect to the Interstate, a noise barrier will not provide any insertion loss.

4.3.5 Wetlands

In compliance with Presidential Executive Order 11990, and using assessment methodology, evaluation procedures and document preparation guidance found in the Federal Highway Administration's (FHWA) Technical Advisory T6640.8A, Title 23, Code of Federal Regulations, Part 777, and Part Two, Chapter 18 of the FDOT's PD&E Manual, Revised 10/01/91, project consideration was given to protect wetland resources. Extensive assessments of wetland and environmental resources within the project corridor have been conducted. The primary goal of these tasks was to identify natural resources which occur within the proposed right-of-way. This information has aided projectengineers in designating a proposed alignment alternative that will minimize environmental impacts within each project segment.

Wetlands associated with the I-4 corridor are generally in poor condition and have been previously disturbed in most instances. The disturbance levels range from light to heavy and can consist of the diversion of water from wetlands (ditching), livestock grazing pressures, and timber and mining operations. All of the forested wetlands in the corridor have been clear cut in the recent past and some logging operations are currently underway. Phosphate mining in the region has affected vast areas of land adjacent to the project and changed the surficial and groundwater hydrology in the region. Large phosphate areas have been reclaimed and now resemble wet prairie and lake habitats.

More than 100 wetland sites were identified, classified, and characterized within the I-4 study corridor. The width of the study area was defined as 76.2 m (250 ft) beyond the existing right-of-way on each side in order to plan for an ultimate design typical section that could be shifted left (north), right (south), or centered. At the locations of proposed improvements to interchanges, the PD&Estudy area borders were also expanded accordingly. The total area that has been studied is approximately 1,158 ha (2,861 ac).

During the Master Plan phase, a corridor typically 244 m (800 ft) wide, centered on the existing I-4 alignment, was evaluated for potential wetland involvement in order to develop an alignment strategy (left, center, right) and typical section alternatives which would eliminate or minimize the wetland impacts to the greatest extent possible. This corridor width was based on using the existing right-of-way (typically 91.4 m (300 ft)) as much as possible and the I-4 Master Plan ultimate typical section of 129 m (424 ft). Within this corridor, 101 wetland areas were identified and evaluated. This analysis revealed that approximately 106.2 ha (262 ac) of wetland had the potential to be impacted. The preferred alternative alignment and typical section reduced the potentialwetland impact to approximately 85.32 ha (210.88 ac).

Wetland Evaluation Technique, Version 2.1 (WET 2.1), was utilized to assess the functional values of those wetlands proposed for impact by the project. Potential wetland impact areas were determined using preliminary roadway typical sections and plans, blueline aerials, and field review. Areas were calculated by planimetering the approximate wetland boundaries from 1:2000 (1 in = 200 ft) aerials.

Three general types of palustrine wetlands dominate the project corridor: forested systems, scrub/shrub communities and emergent marshes. Other wetland types include lakes, manmade open water features, and drainage ditches. The regulatory status of drainage ditches within the project differs between regulatory agencies. Some agencies consider ditches wetlands while others do not. Regardless of their

jurisdictional determination, wet ditches are a prevalent feature of the I-4 corridor and are therefore included in this discussion.

Project wetlands occur within five regional drainage basins. Listed from west to east the basins are: 1) Alafia River Basin, 2) Hillsborough/Withlacoochee Basin, 3) Peace River Drainage, 4) Green Swamp, and 5) Kissimmee River Basin. The Hillsborough, Withlacoochee, Peace, and Kissimmee Rivers comprise the watershed for this project. At a later date, basin boundaries will become an important aspect of surface water permitting.

The interstate bisects a lobe of a large regional recharge area known as the Green Swamp. The existing roadway has created a major constriction in the surface hydrology because of the configuration of the raised roadway fill and relatively few north-south hydrologic connections. These connections, however, would be improved by the proposed project with the installation of modified drainage features.

The Green Swamp abuts the I-4 right-of-way on the north and south sides between CR 557 and US 27. I-4 cuts through the southern tip of this 2201 km^2 (850 mi^2) area in the northeastern quadrant of Polk County. Potential wetland impacts occurring within the Green Swamp portion of the study corridor equal less than 0.015 percent of the Swamp's total area. As is the case with other wetland systems along the I-4 corridor, the portion of the Green Swamp adjacent to I-4 has been severely impacted in the past by mining, logging and ranching practices. Most of the adjacent wetlands are in various stages of succession following extensive logging that took place in the early to mid 1900s.

The proposed project has the potential to have an overall positive effect on wetlands in the project corridor and particularly the Green Swamp region. The drainage system of the proposed I-4 improvements will provide water quality treatment and attenuation of I-4 roadway and interchange stormwater runoff for the length of the project.

The entire Green Swamp was legislatively designated a State Area of Conservation Interest, and in 1974, an Area of Critical State Concern. The Green Swamp falls under the jurisdiction of several agencies which include the Florida Division of Forestry, Southwest Florida Water Management District, St. Johns River Water Management District, and the Florida Game and Fresh Water Fish Commission (Green Swamp Wildlife Management Area only). The Area of Critical State Concern pertains to land in Hillsborough, Pasco, Hernando, Sumter, Lake, and Polk Counties and lies north of I-4. Although few of the wetlands within the project area remain in a natural condition, the Green Swamp area north of the project remains in a relatively natural state and functions as an aquifer recharge area, wildlife preserve, and passive recreational area. The Green Swamp along the I-4 project corridor provides no recreational or public facilities. Vehicular and pedestrian access is restricted bythe limited access fencing and private property owners along the interstate right-of-way.

Impacts associated with the proposed improvements involve impacts to all classifications of wetlands, including the mixed jurisdictional roadside ditches. To avoid andminimize wetland impacts, individual wetlands were ranked according to their design constraints by project biologists. Project engineers subsequently used the wetland ranking to determine alignmentadjustments. An example of an alignment shift that was made as the result of wetland impact avoidance/minimization measures is thecase of Lake Agnes and Little Lake Agnes in Segment 4, where a right alignment avoids open water impacts.

The total area of wetland impact is estimated to be 85.32 ha (210.88 ac). Many of these impacts will be to areas of man-made wetlands, in particular, borrow pits created during construction of the existing roadways, created lakes, and conveyance canals and ditches. The total area of man-made wetlands to be potentially impacted by the preferred alternative is approximately 12.8 ha (31.6 ac) or 15 percent of the total 85.32 ha (210.88 ac) of wetlands impacted. The extent of habitat and wetland plant communities affected by the entire project is minimal and in kind replacement can be accomplished through the creation of additional borrow areas and roadside conveyance ditches or the addition of littoral shelves to existing wetland areas.

Approximately 50.9 ha (125.8 ac), 60 percent of the total estimated acreage of potential wetland impact, is located within the existing right-of-way. The majority of the remainder of the potentially impacted wetlands are immediately adjacent to the existing right-of-way. Extensive field reviews of the project corridor indicate that no "critical habitat" (i.e., wading bird nesting colonies) occurs within the potentially impacted wetland areas. No listed species occur within the potentially impacted wetlands of the study area except for transient foraging wading birds. The wetland areas to be disturbed are not unique foraging habitat. Those wetland areas that will be disturbed by the proposed improvements to I-4 will be compensated for by mitigation coordinated through the appropriate resource agencies.

Land use adjacent to the roadway within the Green Swamp region ranges from surface mining to relatively intact forested wetlands. Most of the historic forested areas have been logged, resulting in even aged tree stands (particularly cypress), loss of pinelands for pasture and residential development, and increased hardwood prevalent in historic cypress/hydric pine habitat.

The existing roadway bisects large and small wetlands, isolated, and contiguous wetlands ranging in disturbance levels from low to high. A large portion of wetland involvement concerns roadway associated wetlands, such as roadside ditches, borrow pits, excavated lakes, and the disturbed fringes and secondary growth of adjacent forested wetlands affected by the initial construction. Most existing wetland function will not be affected due to the large size of the wetlands and the existing impacted condition (i.e., bisected, existing linear impacts). Loss of storage is the most apparent effect in regard to wetland fill. Effects to wetland function will be greatest to small, non-contiguous wetlands as the impact ratio increases relative to the remaining wetland. This is typically not the case in the Green Swamp Region, but it does occur to a small extent. The small scale and immediate locality effects of wetland impacts may be moderate in these instances, but the overall large scale effects are minimal due to the spacial heterogeneity of the wetlands in the region and the generally low functional value individual wetlands have in relationship to the Green Swamp *in toto.*

Table 4-7 presents the total area of potential wetland impacts by project segment and wetland classification.

TABLE 4-7
TOTAL AREA OF POTENTIAL WETLAND IMPACT BY WETLAND CLASSIFICATION AND PROJECT SEGMENT
I-4 Project Development and Environment Study

Wetland Habitat Classification[1]	Area of Potential Impact[2,3] by Project Segment Hectares (acres)								
	2	3	4	5	6	7	8	9	Total
PFO	0.44 (1.08)	7.76 (19.19)	0.65 (1.60)	15.66 (38.70)	24.49 (60.51)	3.54 (8.74)	---	---	52.54 (129.82)
PEM	0.40 (1.00)	0.27 (0.68)	0.42 (1.03)	1.91 (4.71)	0.14 (0.35)	2.25 (5.57)	2.49 (6.16)	---	7.88 (19.50)
PSS	---	3.03 (7.50)	4.48 (11.08)	1.61 (3.99)	15.05 (37.18)	0.44 (1.09)	---	---	24.61 (60.84)
POWHx	---	---	0.04 (0.09)	0.23 (0.58)	---	---	---	---	0.27 (0.67)
L1UBHx	---	---	0.02 (0.05)	---	---	---	---	---	0.02 (0.05)
Total Impact Area	0.84 (2.08)	11.06 (27.37)	5.61 (13.85)	19.41 (47.98)	39.68 (98.04)	6.23 (15.40)	2.49 (6.16)	0	85.32 (210.88)

[1] Classification Description
PFO - Palustrine Forested
PEM - Palustrine Emergent
PSS - Palustrine Scrub/Shrub
POWHx - Palustrine, Open Water, Permanently Flooded, Excavated
L1UBHx - Lacustrine, Limnetic, Unconsolidated Bottom, Excavated

[2] Area of Impact Based on Proposed Alignment, Recommended Typical Section and Potential Stormwater Management Impact
[3] "Soft" conversion from English to metric units was used to calculate area.

Secondary and cumulative impacts at both the regional and local scale are minimal due to the existing condition. The bisection created by the initial construction of I-4 produced the habitat separation and barrier effects to flood flow and wildlife movement often attributed to this section of I-4. Increased road width will compound some cumulative problems associated with stormwater runoff, wildlife movement, and lost wetland storage volumes resulting from fill requirements. However, the proposed project will contain three large wildlife undercrossings where virtually none exist and all storage volumes and treatment of storm water will be addressed according to current regulatory guidelines.

Of the wetland areas north and south of I-4 that the Florida Game and Fresh Water Fish Commission (FGFWFC) rated as very high in terms of a Biodiversity Hot Spot, containing considerable habitat designated as a strategic Habitat Conservation Area, and/or has a very high Species Richness Index, only very minimal impacts to these wetland functions are anticipated as aresult of the proposed improvements to I-4. Please refer to the Endangered Species Biological Assessment (ESBA), March 1998 for additional information regarding wildlife and habitat within the I-4 project corridor.

All wetland impacts will be mitigated for through the use of one or more of several compensation options including: in-kind replacement; wetland enhancement; or mitigation banking in coordination with all regulatory agencies. The FDOT is currently working with the water management districts and other agencies to develop corridor, regional, and district-wide Ecosystem Management Plans (EMP). Wetland mitigation banking is one of the EMP elements being considered.

In accordance with FHWA policy as contained in 234 CFR 777.11, the full range of mitigation options were considered in developing this project, including avoidance, minimization, restoration, enhancement, creation, and the use of 373.4137 F.S. (The Bronson Bill), which allows payment of $75,000 per acre to the Water Management Districts for their use in mitigating the impacts.

Based on the above considerations, it has been determined that there is no practicable alternative to the proposed construction in wetlands, and that the proposed action includes all practicable measures to minimize harm to wetlands.

Final determination of jurisdictional areas, proposed wetland impacts, and mitigation requirements will occur through coordination among FDOT and natural resource regulatory agencies during the final design and permitting phase of the project.

Table 4-8 summarizes the total area of potential forested and non-forested wetland impacts by Segment.

TABLE 4-8
TOTAL AREA OF POTENTIAL FORESTED AND NON-FORESTED WETLAND IMPACTS BY STUDY SEGMENT IN HECTARES (ACRES)
I-4 Project Development and Environment Study

Segment	Forested	Non-Forested	Total
2	0.44 (1.08)	0.40 (1.0)	0.84 (2.08)
3	7.76 (19.19)	3.30 (8.18)	11.06 (27.37)
4	0.65 (1.60)	4.96 (12.25)	5.61 (13.85)
5	15.66 (38.70)	3.75 (9.28)	19.41 (47.98)
6	24.49 (60.51)	15.19 (37.53)	39.68 (98.04)
7	3.54 (8.74)	2.69 (6.66)	6.23 (15.40)
8	0.0 (0.0)	2.49 (6.16)	2.49 (6.16)
9	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Total	52.54 (129.82)	32.78 (81.06)	85.32 (210.88)

Note: "soft" conversion from English to metric units was used to calculate area.

4.3.6 Aquatic Preserves

There are no Aquatic Preserves within the project area.

4.3.7 Water Quality

The proposed storm water facility design will include, at a minimum, the water quantity requirements for water quality impacts as required by Southwest Florida Water Management District (SWFWMD) in Chapters 40D-4 and 40D-40 and St. Johns River Water Management District (SJRWMD) in Chapters 40C-4, 40C-40 and 40C-42 FAC. Therefore, no further mitigation for water quality impacts will be needed. Please see the attached Water Quality Impact Evaluation (WQIE) check List for additional information (Appendix F).

4.3.8 Outstanding Florida Waters

There are no Outstanding Florida Waters (as defined by Florida Administrative Code, Chapter 17-3.041) within the project area.

4.3.9 Contamination

A total of 54 sites (47 for this project, plus seven sites listed in Segment 8 for the US 98 CSER) were initially identified.

A Level 1 Contamination Screening Evaluation Report (CSER), January 1998 was prepared pursuant to the FHWA's Technical Advisory T 6640.8A, dated October 30, 1987, and in accordance with the FDOT's PD&E Manual, Part 2, Chapter 22, dated February 8, 1994, as further modified and clarified by the District Contamination Impact Coordinator. The purpose of the CSER is to determine the potential for contamination of the right-of-way from adjacent properties and business operations.

Soil Boring and Organic Vapor Analyzer (OVA) screenings were completed on June 30, July 3 and July 5, 1995 for hazardous materials and petroleum sites initially rated as having a MEDIUM to HIGH potential for contamination. The OVA screenings revealed no evidence of soil or groundwater contamination in any of the sites tested. Based on the historic nature of the business conducted (e.g. gasoline service stations), the additional right-of-way required, the known past incidents of contamination, and/or the close proximity of the tanks to the proposed right-of-way, four of the petroleum sites remained rated as having a MEDIUM potential for the presence of contamination. The rating of the other sites was revised to LOW. Table 4-9 lists the four sites with a MEDIUM rating.

Two areas within the I-4 project corridor were documented by the FDEP as having known groundwater contamination stemming from the past use of the pesticide ethylene dibromide (EDB) including the area around the SR 559 interchange in Segment 4 and the area around the US 27 interchange in Segment 9 (including the eastern end of Segment 6). On September 12, 1995, soil samples were obtained from existing or former citrus grove areas where there is concern for possible EDB or other pesticide/herbicide contamination. Each soil sample was analyzed for Organochlorine Pesticides and Polychlorinated Biphenyls (PCBs) (EPA Method 608), Organophosphorus Pesticides (EPA Method 814), Chlorinated Herbicides (EPA Method 615) and EDB (EPA Method 810). The results of the laboratory analysis of soil

samples indicate that none of the constituents for which analysis was performed were found above the laboratory detection limit.

Table 4-9
I-4 POTENTIAL CONTAMINATION SITES
I-4 Project Development and Environment Study

Site No.	Name	Final Rating
61S	Amoco/Lung Ho Ventures, Inc. (Segment 4)	Medium
68N	Speedway Station #8179 (Segment 9)	Medium
72S	Exxon #45536 (Segment 9)	Medium
75S	Amoco #17 (Segment 9)	Medium

Because of the negative results of the OVA screenings, EDB soil sample analysis and of the lack of known contamination, no contamination cleanup costs have been developed for the sites identified for this project.

Seven petroleum sites were evaluated in Segment 8 for the US 98 PD&E project (SPNs 16210-1514A and 16210-1514B), November 1993, and the CSER for US 98 Pond Sites, July 1995 (SPN 16210-1514). These sites are listed in this report because they have the potential to be impacted by the proposed improvements to the I-4/US 98 interchange. Soil borings and OVA screenings were conducted for the US 98 project in 1993. The US 98 sites and their contamination potential ratings (assigned for the US 98 CSER) are shown in Table 4-10. The US 98 project north of I-4 is currently being designed and is expected to be constructed in Fiscal Year 1996/97. Construction of the proposed improvements to US 98 south of I-4 are not included in the FDOT five-year work program, however, at this time it is anticipated that the US 98 improvements would precede the proposed I-4 improvements.

Table 4-10
US 98 POTENTIAL CONTAMINATION SITES
I-4 Project Development and Environment Study

US 98 Site No.	Name	Rating
24W	Miami Subs (Segment 8)	High
26W	Mobil Station #02-CXW (Segment 8)	High
25E	Chevron Station #47445 (Segment 8)	High
23W	Shorty's Amoco #202 (Segment 8)	High
21W	Coastal Mart #666 (Segment 8)	High
20W	Racetrac Petroleum, Inc. #234 (Segment 8)	High
22E	Union 76 Truck Stop (Segment 8)	High

The FDOT has evaluated the proposed right-of-way and has identified potentially contaminated sites for the various proposed alternatives. Results of this evaluation were used in the selection of a preferred alternative. When a specific alternative is selected for implementation, site assessments will be performed, as necessary, to determine levels of contamination and, if necessary, evaluate the options to remediate along with the associated costs. Resolution of problems associated with contamination will be coordinated with the appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, where applicable.

For additional information regarding the potential for contamination in the I-4 corridor, refer to the Contamination Screening Evaluation Report, January 1998 prepared as a separate document.

4.3.10 Wild and Scenic Rivers

There are no rivers designated as being Wild and Scenic in the project area.

4.3.11 Flood Plains

FEMA has prepared a Flood Insurance Study (FIS) for Polk County, September 1980, revised October 18, 1988. With the exception of Community-Panel Number 120261-0190 D, revised October 18, 1988; the Flood Insurance Rate Maps (FIRMs) for Polk County showing the I-4 study area are dated January 19, 1983. These include Community-Panel Numbers 120261-0100 B, 120261-0125 B, 120261-0175 B, 120261-0200 B, 120261-0225 B, 120261-0250 B, 120261-0285 B, 120261-0295 B, 120261-0305 B and 120261-0310 B. A review of these FIRMs indicate that the proposed I-4 alignment encroaches or borders on the base flood plain at 38 locations. The flood plain encroachment locations are shown in Figure 4-3, pages 4-34 through 4-40.

Preliminary FIRM Map Panel 12105C0284, dated September 30, 1996, (not yet approved) includes a Floodway at the I-4 crossing of Itchepackesassa Creek Tributary 1, located about 1.5 km (0.85 mi) west of Kathleen Road in Segment 2. The delineated Floodway is shown as contained within the existing

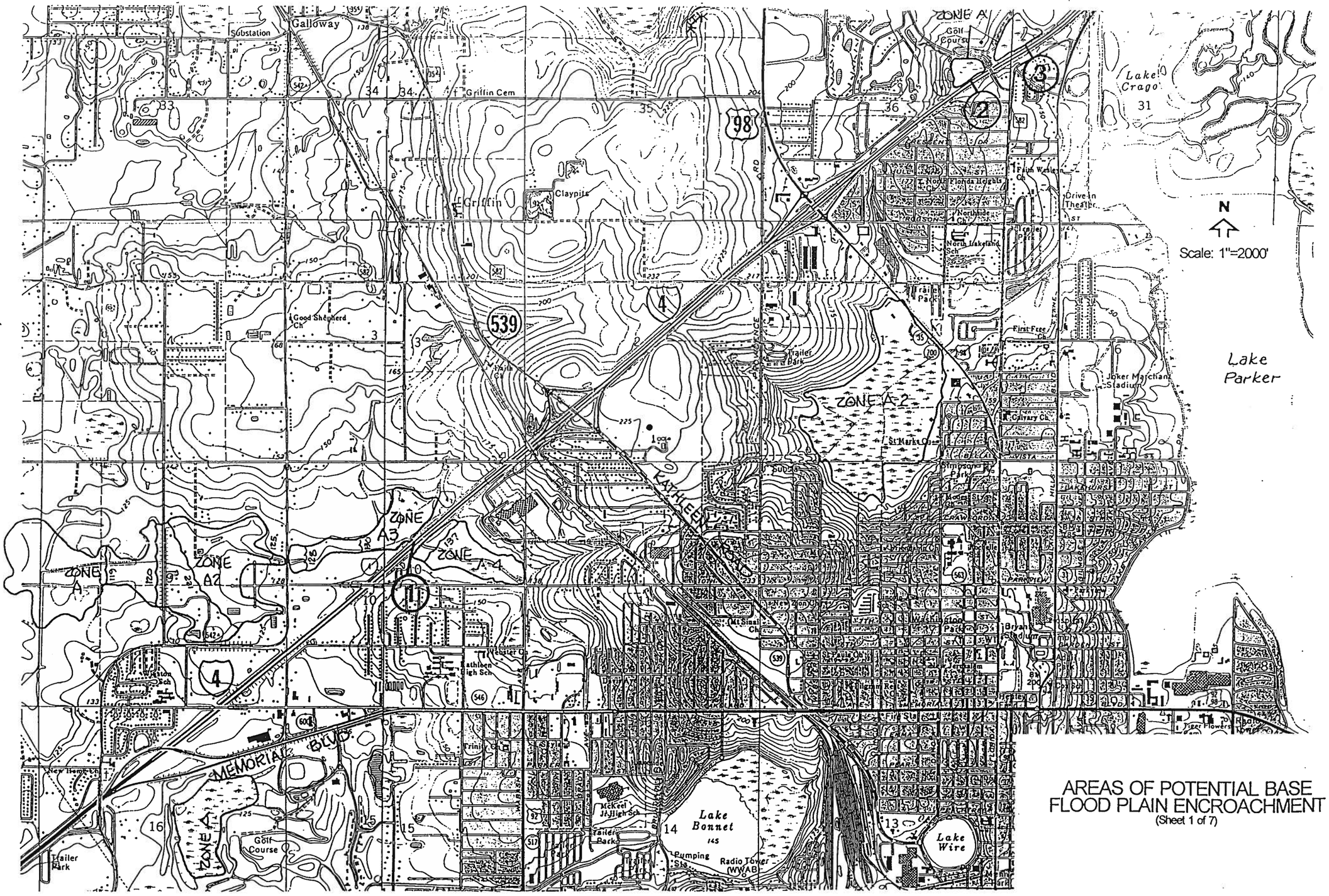
channel (culvert) at the I-4 crossing. The existing cross drain is a 1.8 m x 1.8 m (6 ft x 6 ft) concrete box culvert. The proposed I-4 improvements will replace or modify the existing culvert with one of equal or greater hydraulic capacity and, as such, will not increase the water surface elevations.

The proposed improvements to I-4 are consistent with the existing watershed and flood plain management programs for the Lakeland Planning Area and Polk County as defined by the Lakeland Comprehensive Plan: Year 1990-2000 and the Polk County Comprehensive Plan January 31, 1994, respectively.

Of the 38 locations identified as having the potential for flood plain encroachment, it is anticipated that the proposed improvements to I-4 would encroach at 30 of the flood plain locations. The estimated encroachment impacts range from 100 m^3 (0.08 ac-ft) at Encroachment Location No. 7 to 12,740 m^3 (10.33 ac-ft) at Encroachment Location No. 10. The estimated total volume of flood plain displacement for the length of this project is 101,625 m^3 (82.39 ac-ft). Subsequent design phases of this project will be required to compensate for this loss of flood plain storage through mitigation coordinated with the SWFWMD and SJRWMD.

Eight of the 38 potential flood plain encroachments are in Evaluation Category 1. Category 1 encroachments would not involve any work below the 100-year flood elevation. Although work within the horizontal limits of the 100-year flood plain would be involved, no work is being performed below the 100-year flood elevation, and as a result, no encroachment upon the base flood plain would occur.

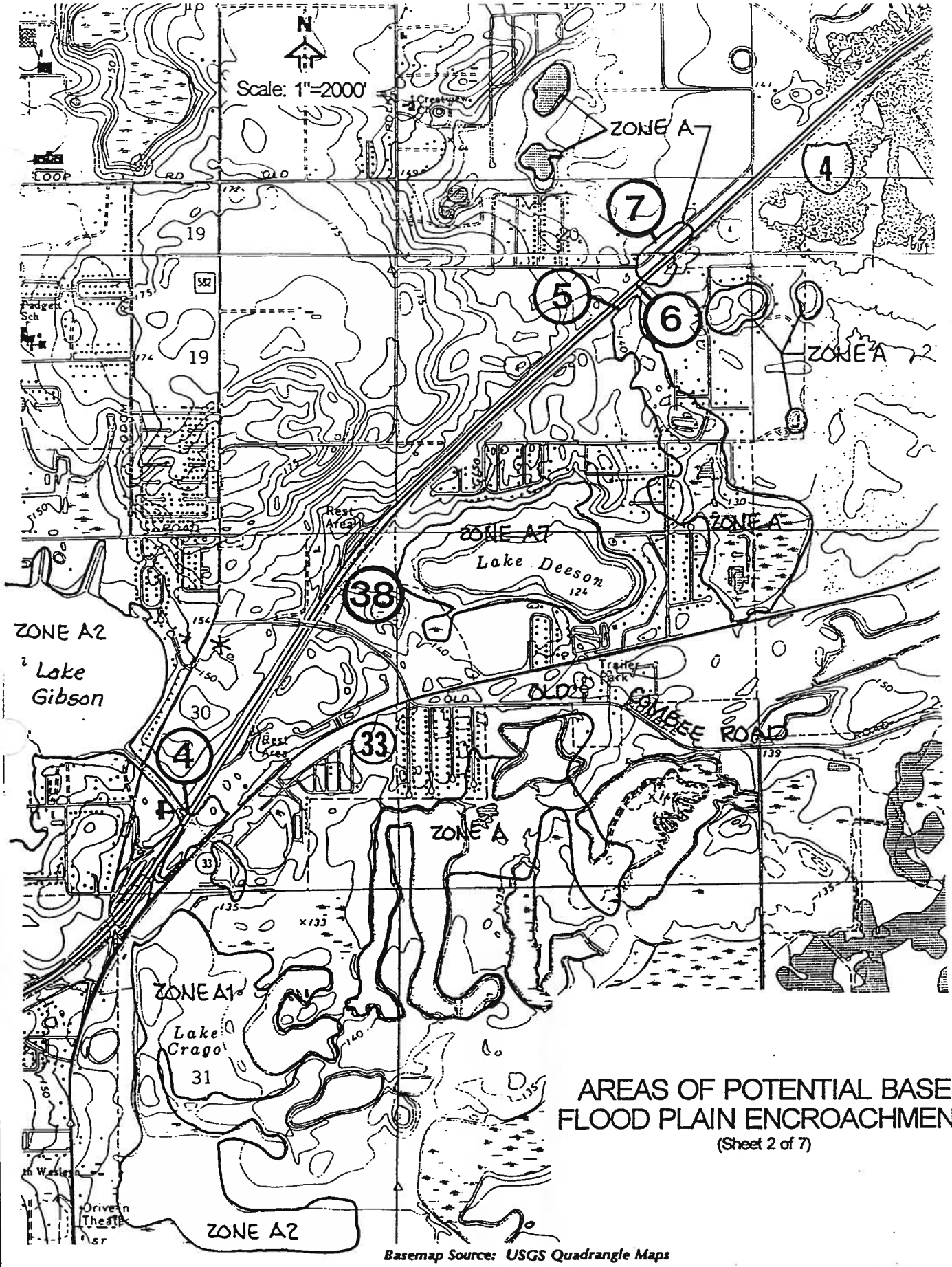
Fifteen of the potential flood plain encroachments are in Evaluation Category 2. This category of encroachments do not involve the replacement or modification of any drainage structures. Flood heights or base flood plain limits will not be affected. Increased or new adverse environmental impacts will not result. Flood risk or damage will not be increased; and there will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. This encroachment has been determined to be not significant.



AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT
(Sheet 1 of 7)

Basemap Source: USGS Quadrangle Maps

AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 4-3a

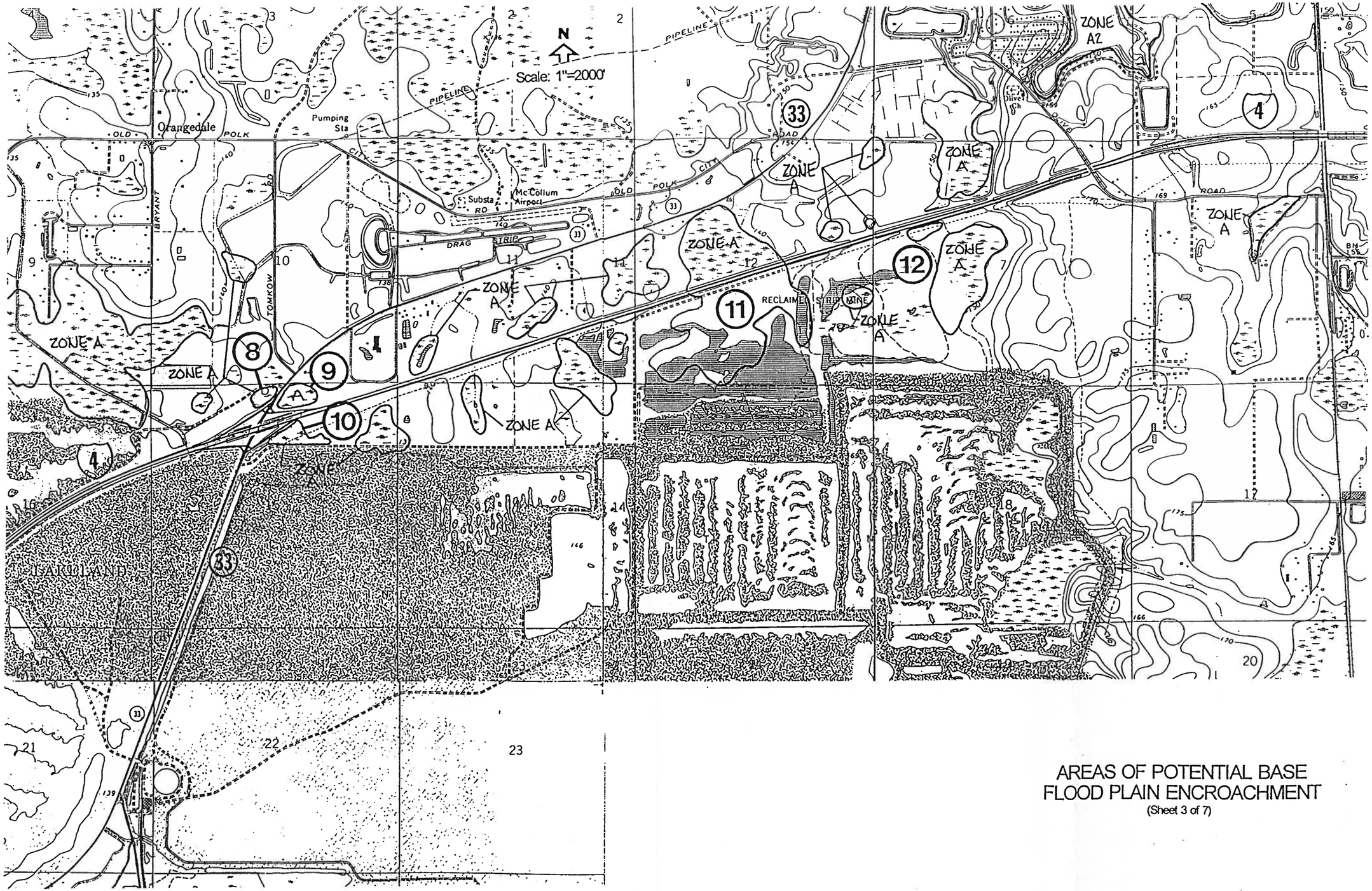


AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT

(Sheet 2 of 7)

Basemap Source: USGS Quadrangle Maps

AREAS OF POTENTIAL BASE FLOOD PALIN ENCROACHMENT	Environmental Assessment State Project No. 16320-1402	4 Polk County	FIGURE 4-3b



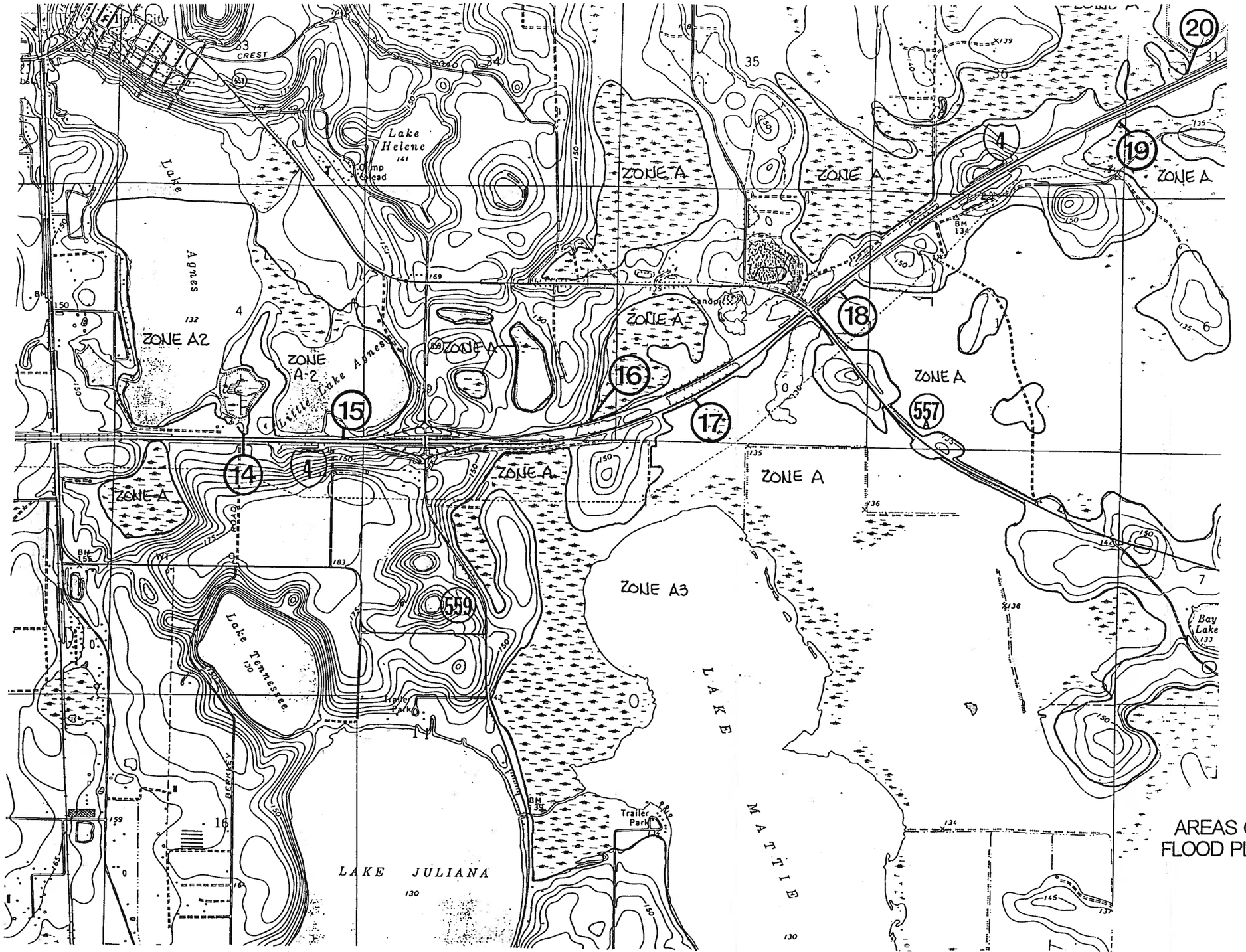
AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT
(Sheet 3 of 7)

AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT

Environmental Assessment
State Project No. 16320-1402

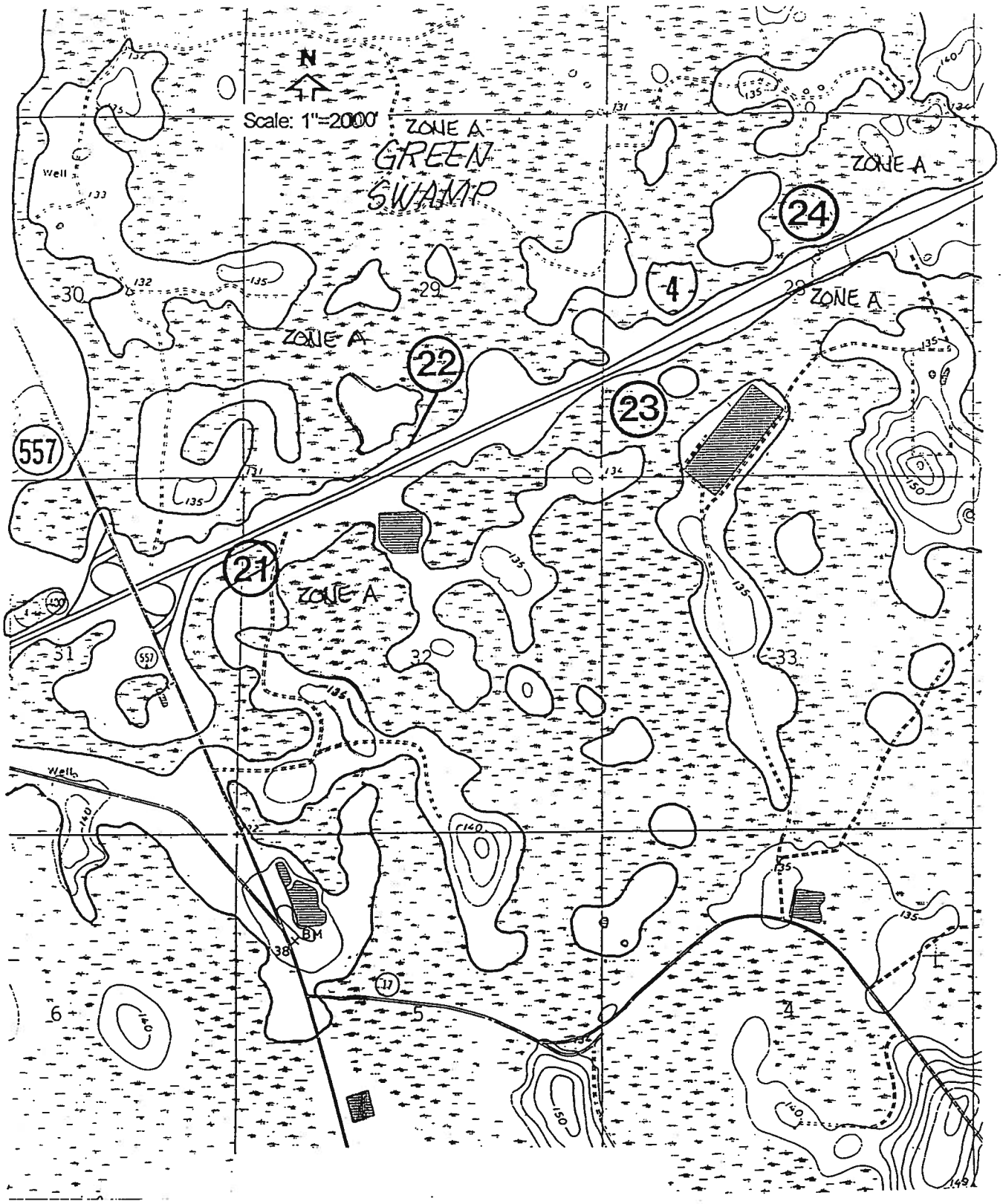
Polk County

FIGURE 4-3c



AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT
(Sheet 4 of 7)

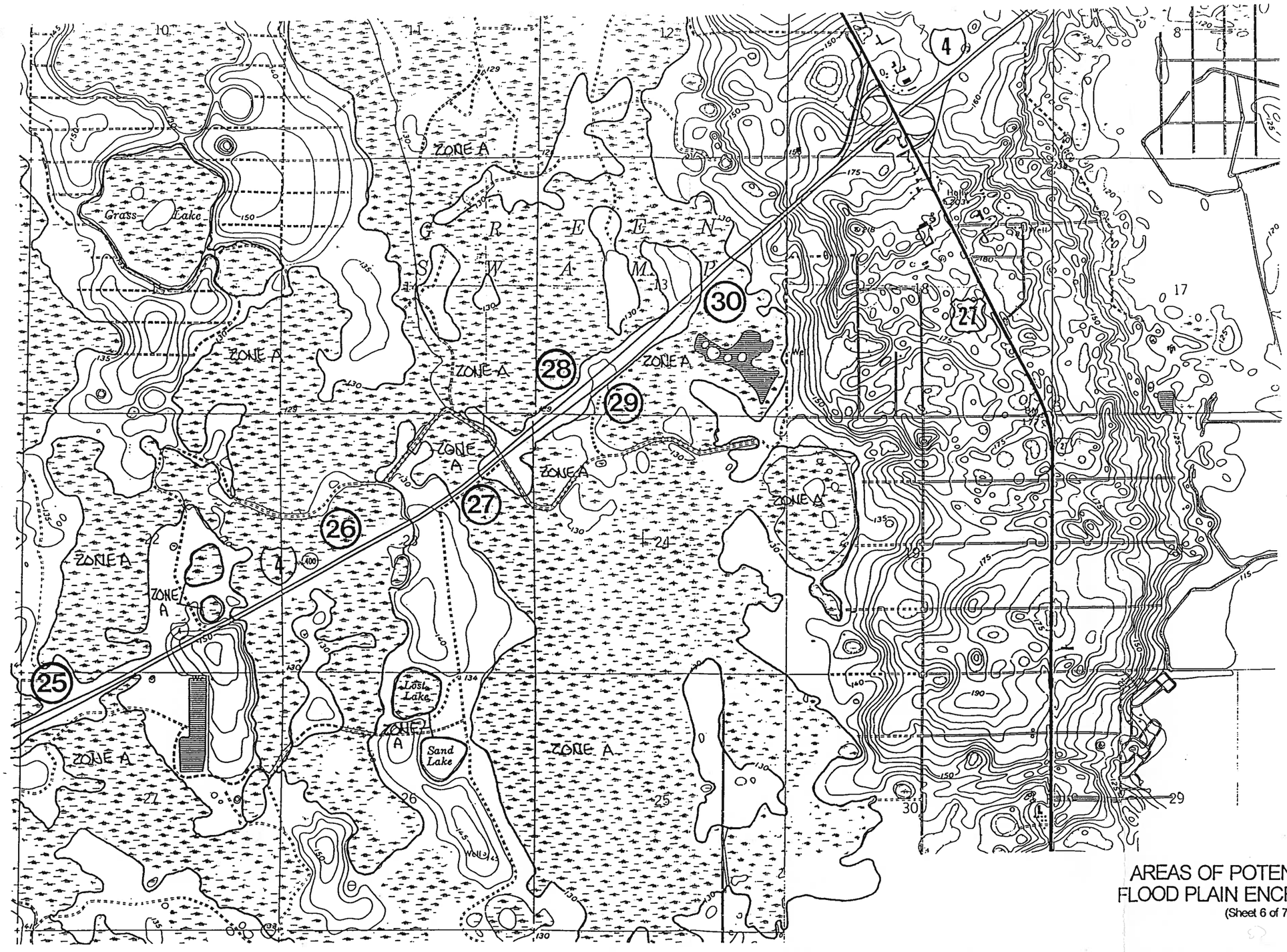
AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 4-3d



AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT
(Sheet 5 of 7)

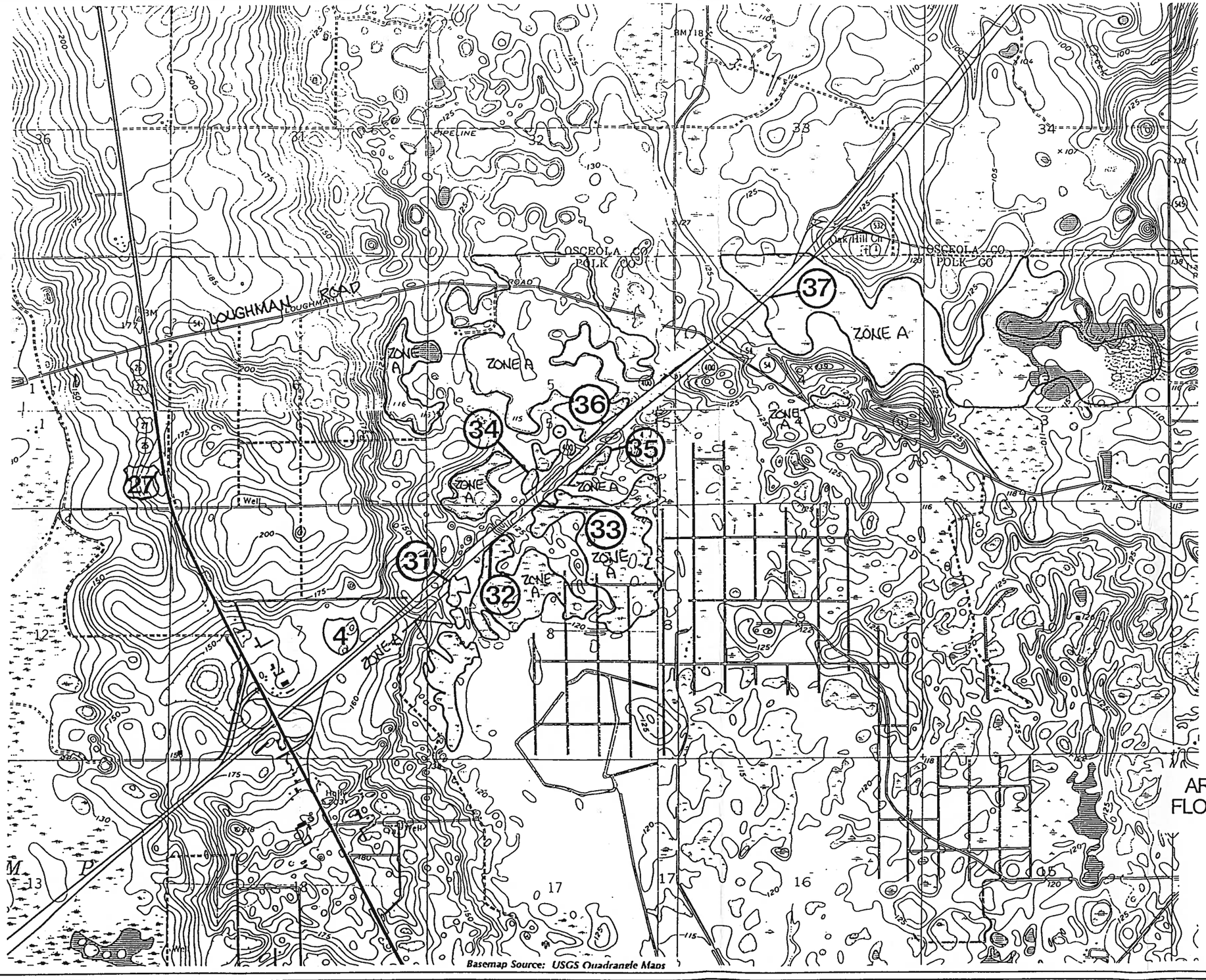
Basemap Source: USGS Quadrangle Maps

AREAS OF POTENTIAL FLOOD PLAIN ENCROACHMENT	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 4-3e



AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT
(Sheet 6 of 7)

AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT	Environmental Assessment State Project No. 16320-1402	Polk County	FIGURE 4-3f



AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT
(Sheet 7 of 7)

AREAS OF POTENTIAL BASE FLOOD PLAIN ENCROACHMENT

Environmental Assessment
State Project No. 16320-1402

Polk County

FIGURE 4-3g

Fifteen of the potential flood plain encroachments are in Evaluation Category 4. These encroachments involve the replacement of drainage structures with hydraulically equivalent structures, and backwater surface elevations are not expected to increase. As a result, there will be no significant adverse impacts on natural and beneficial flood plain values. There will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. This encroachment has been determined to be not significant.

In all cases, the project would result in no significant adverse impacts on natural and beneficial flood plain values and no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that these encroachments are not significant. For further information regarding flood plains, refer to the Location Hydraulics Report dated July 1995, Revised August 1998 prepared as a separate document.

4.3.12 Coastal Zone Consistency

The Office of Planning and Budget, Office of the Governor has determined that this project is consistent with the Florida Coastal Zone Management Plan. The letter from the State of Florida Department of Community Affairs, dated May 22, 1995 can be found in the project file.

4.3.13 Wildlife and Habitat

This project has been evaluated for impacts to wildlife and habitat resources, including protected species, in accordance with the Endangered Species Act of 1973 as amended by Rules 39-25.002, 39-27.002, and 39-27.011 of the Wildlife Code of the State of Florida (Chapter 39, FAC). A literature review, field surveys, and coordination with the USFWS and the FGFWFC were conducted to determine if any protected species occur within the project area. The project team coordinated with the USFWS and the FGFWFC directly and through an environmental advisory group established to evaluate the potential for the inclusion of wildlife undercrossings into the proposed improvements to I-4. A review of the road alignment for the potential occurrence of Federal and State listed plant and animal species was conducted during the initial study phase and subsequent site reviews. No critical habitat, for any protected species; with the exception of known nest locations, was identified within the project corridor.

This project has been designed with a minimized typical section, generally centered on the existing alignment and utilizes the existing right-of-way to the greatest extent possible. The alignment of the proposed I-4 improvements considered all practicable measures to minimize harm to wildlife and habitat.

Pedestrian and windshield surveys were conducted for the I-4 corridor and established guidelines were used where the potential for protected species existed. No critical habitat for any protected species has been identified within the project corridor.

Many species of wading birds have been observed foraging in the wetland areas of the I-4 corridor. Impact to valuable habitats that are critical to any one species are limited due to the linear nature of the project. Areas of concern within the I-4 corridor include upland areas conducive to habitation by the Florida scrub jay, and corridor areas adjacent to known and potential nesting sites of the Florida sandhill crane, the Southeastern American kestrel, and the bald eagle. The wood stork and other wading birds are also species of concern since they have been observed feeding in the I-4 corridor. For more information

regarding wildlife and habitat, refer to the Endangered Species Biological Assessment, April 1998, prepared as a separate document.

Impacts to Florida scrub jay territories will result with the proposed project. The road widening would directly affect 1.28 ha (3.17 ac) of Type III habitat within the territory of a clan but would probably not affect access to the remaining territories or the survival of the existing clans due to the negative roadway elevation relative to the surrounding grade and the apparent habituation to traffic these clans exhibit. Mitigation for impacts to Florida scrub jay territories will be accomplished at a ratio of 2:1 through utilization of the FDOT Highlands County mitigation bank. Consultation with the USFWS has been initiated in accordance with Section 7 of the Endangered Species Act. Letters from the USFWS and FGFWFC concurring with proposed mitigation are included in Appendix G.

Potential habitat for nesting cranes does occur along the I-4 corridor, however, no nests were found within or adjacent to the I-4 right-of-way. A multi-species rookery (identified as POLK001040 by the FGFWFC) is located 2.01 km (1.25 mi) south of I-4 and about 2.41 km (1.5 mi) east of the SR 33 interchange. The rookery is not within 457 m (1500 ft) of the roadway, therefore, it is anticipated that scheduling of construction activities will not be affected.

The USFWS has designated primary zones to extend 750 feet in all directions from bald eagle nests PO49, PO49A, PO50A and PO64A and a secondary zone to extend an additional 750 feet from the boundary of the primary zone, for a total distance of 1,500 feet from each nest. The proposed project is located outside of the protection zones for these bald eagle nests. The USFWS concluded in a letter dated 8-27-97 (see Appendix G), "That the proposed project is located outside of the protection zones for bald eagle nests PO49, PO49A, PO50A and PO64A. Therefore, we conclude that the proposed project is not likely to adversely affect the aforementioned bald eagle nests."

All gopher tortoise appropriate habitat within the I-4 corridor was surveyed according to FGFWFC methodology guidelines. Gopher tortoise habitat exists in several areas along the I-4 corridor, although no active, inactive or abandoned burrows were identified within the project limits. Tortoise burrows have been seen in abandoned citrus groves and improved pasture areas along the I-4 corridor outside of the proposed right-of-way. Incidental take permits will be required for additional impacts potentially occurring to individuals found along the linear impact zone of construction. A resurvey of the project corridor (or appropriate habitat) may be required prior to construction. Mitigation, if required, will be accomplished through the use of the FDOT Highlands County mitigation bank.

The construction phase of this project is currently not included in the FDOT 5-year work program. Because of anticipated delay in construction, a resurvey of the project corridor may be required. Potential impacts to protected plant and animal species found within the proposed right-of-way will require consultation and coordination with both state and federal regulatory agencies pursuant to federal and state regulations.

Wildlife Undercrossings -- On a statewide basis, wildlife corridor analyses has been conducted by Florida Greenways and FGFWFC. The results of this analyses indicates that the Withlacoochee, Hillsborough, Peace and Kissimmee River basins are regional connections to other important areas of remaining wildlife habitat. The preservation of areas like the Green Swamp is an important step in preserving the natural ecosystems of a region. Disturbances to habitat areas in the Green Swamp have remained relatively low due to the inaccessibility of most of the area. The linking of natural areas like the Green Swamp north and

south of I-4 allows the exchange and importation of different genetic stocks to ensure that healthy populations of wildlife are maintained.

At the request of the FDOT and under the direction of the League of Environmental Organizations and the Central Florida Regional Planning Council, an I-4 Environmental Advisory Group (EAG) was formed to bring together diverse interest groups and expertise involved in the wildlife corridor issue. A recommendation for the location and/or need for wildlife undercrossings in the I-4 corridor was determined through this process in addition to coordination with state and federal agencies. The potential for locating one or more wildlife undercrossings within the I-4 project area was considered.

Two recommended wildlife undercrossing locations are the vicinity of the Green Swamp between the CR 557 and US 27 interchanges (Segment 6), an area of habitat concern that is in need of protection. The proposed habitat connections would coincide with two proposed low-level bridges spanning areas of unsuitable geological stability (deep muck deposits). These locations are about 3.5 km (2.2 mi) and 6.8 km (4.2 mi) east of the CR 557 interchange, respectively. A third I-4 wildlife undercrossing crossing location was identified in the vicinity of Saddle Creek and the Tenoroc Management Area (an area poised for restoration activity in conjunction with the phosphate industry in coordination with FGFWFC). This undercrossing, located about 3.7 km (2.3 mi) east of the SR 33 interchange, would provide a wildlife corridor link within the Peace River drainage basin on either side of I-4. This wildlife undercrossing would also be a low-level bridge spanning a drainage way connecting a series of wetlands north of I-4 to a reclaimed strip mining area south of I-4.

Design criteria to enable the area under the bridges to be used as I-4 wildlife undercrossings have been coordinated with the FGFWFC, the USFWS, the FDEP and the SWFWMD and SJRWMD. At a coordination meeting with the FGFWFC on May 26, 1995, criteria for wildlife undercrossings were established:

- It was agreed that an AASHTO girder type structure would be preferable to a flat slab type structure for the following reasons:

    1) the AASHTO girder type would be more economical because fewer piers would be required;
    2) it should be less noisy; and
    3) it provides for a more open, less restricted area for wildlife to cross underneath the structure.

- Span lengths of less than 12.2 m (40 ft) should not be used. This is the minimum span length that has been used for wildlife undercrossings and has been documented to function (Alligator Alley).

- The vertical underclearance should be at least 2.4 m (8 ft) above seasonal high water (SHW) or existing ground (whichever is higher).

- High fencing would be provided in the median to control wildlife movement through the undercrossing.

- The type of right-of-way fencing would be determined during subsequent phases of this project.

- For the structures in Segment 6, the bridge abutments would have normal slope protection to within 0.3 m (1 ft) above SHW. At that elevation a 3.0 m (10 ft) wide level (or only slightly sloped to drain) bench would be constructed. From the bench the fill would slope to the water and/or existing ground at a slope no steeper than 10 horizontal to 1 vertical.

- For the structure in Segment 4, the bridge abutments would have normal slope protection to existing ground (since SHW is below ground level in this area). The distance between the bottom of the abutment slopes would not be less than 30 m (98.4 ft). A channel would be constructed under the bridges to accommodate the existing drainage. The side slopes of the channel would be as flat as hydraulically possible down to the normal water level. The existing roadway embankment between the Stage I bridges would be removed down to match the existing ground levels at the north and south right-of-way lines.

Coordination with the FGFWFC regarding wildlife undercrossings is included in Appendix G. The locations of the proposed wildlife undercrossings are shown on the concept plans.

4.3.14 Farmlands

In compliance with the Farmland Protection Policy Act (FPPA) of 1984, farmlands along the proposed I-4 alignment were evaluated for potential impacts. See Appendix H for the Farmland Conversion Impact Rating Form and coordination letters with the Natural Resource Conservation Service (NRCS) (formerly the Soil Conservation Service).

The State Soil Scientist has reviewed the project corridor and determined that under the NRCS's definition, no prime and unique farmlands will be converted by the project to transportation use.

4.3.15 Construction

Improvements to I-4 would be constructed in two stages. Generally, Stage I would consist of the construction of the six general purpose lanes and drainage structures (including storm water management ponds), removal of the existing lanes and replacement of the cross road and interchange structures. Generally, Stage II would consist of the addition of the four special use lanes and slip ramps. Stage I would be designed and constructed to accommodate the addition of Stage II at a later date. Each stage would be complete unto itself, containing signing, marking, lighting and aesthetics.

Construction activities for the proposed improvements to I-4 would have air, noise, water, wetlands, traffic flow, and visual impacts for those residents and travelers within the immediate vicinity for the project.

The air quality impact would be temporary and would primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles would be effectively controlled through the use of watering or the application of calcium chloride in accordance with FDOT's Standard Specifications for Road and Bridge Construction as directed by the FDOT Project Manager.

Noise and vibration impacts would be from the heavy equipment movement and construction activities such as pile driving and vibratory compaction of embankments. Noise control measures would include

those contained in FDOT's Standard Specifications for Road and Bridge Construction in addition to those recommended in the Noise section of this document.

During project construction, potential short-term increases in water turbidity could affect wetlands and water quality. Water quality impacts resulting from erosion and sedimentation would be controlled in accordance with FDOT's Standard Specifications for Road and Bridge Construction and through the use of Best Management Practices.

Maintenance of traffic and sequence of construction would be planned and scheduled so as to minimize traffic delays throughout the project. Signs would be used as appropriate to provide notice of road closures and other pertinent information to the travelling public. The local news media would be notified in advance of road closings and other construction-related activities.

A sign providing the name, address, and telephone number of a FDOT contact person would be displayed on-site to assist the public in obtaining immediate answers to questions or logging complaints about project activity.

Access to all businesses and residences would be maintained to the extent practical through controlled construction scheduling. Within the project limits, the present traffic congestion may become worse during stages of construction where narrow lanes may be necessary. Traffic delays would be controlled to the extent possible where many construction operations are in progress at the same time. The contractor would be required to maintain two lanes of traffic in each direction at all times and to comply with the Best Management Practices of FDOT. Also, present interchange movements would be maintained through use of detour ramps. No other locations would require temporary roads or bridges.

For the residents living along the I-4 right-of-way, some of the materials stored for the project may be displeasing visually; however, this is a temporary condition and should pose no substantial problem in the short term.

Construction of the roadway and bridges requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock, asphaltic concrete, and portland cement concrete. Demucking is anticipated at most of the wetland sites and would be controlled by Section 120 of the FDOT Standard Specifications. Disposal would be on-site in detention areas or off-site. The removal of structures and debris would be in accordance with local and State regulation agencies permitting this operation. The contractor is responsible for controlling pollution on haul roads, in borrow pits, other materials pits, and areas used for disposal of waste materials from the project. Temporary erosion control features as specified in the FDOT's Standard Specifications, Section 104, would consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

5.0 COMMENTS AND COORDINATION INTRODUCTION

In compliance with State and Federal rules, regulations and policies a Public Involvement Program was developed and carried out as an integral part of this project. The purpose of this program was to establish and maintain communication with the public at-large and individuals and agencies concerned with the project and its potential impacts as they relate to the proposed improvements of Interstate 4 (SR 400), from west of Memorial Boulevard (MP 2.565) in Polk County to the Polk/Osceola County line (MP 32.022), from a four-lane to a ten-lane divided interstate facility, a distance of about 47.4 km (29.5 mi). To ensure open communication and agency and public input, the Florida Department of Transportation (FDOT) had provided an early notification package to State and Federal agencies and other interested parties which defined the project and described anticipated issues and impacts. In addition, to expedite the project development processes, eliminate unnecessary work, and provide a substantial issue identification/problem solving effort, the FDOT has carried out the scoping process as required by the Council of Environmental Quality Guidelines (CEQ).

In an effort to resolve all issues identified, the FDOT conducted an extensive interagency coordination and consultation effort, and public participation process. The following sections of this report detail the FDOT's program to fully address and resolve all project-related issues identified through the Public Involvement Program.

5.1 Advance Notification

The FDOT initiated early project coordination on February 1, 1995, by distribution of an Advance Notification Package to the Florida State Clearinghouse, Office of the Governor, Tallahassee, Florida in accordance with Executive Order 83-150. The following agencies or government entities received an Advance Notification Package. An (*) indicates those agencies that responded to the package.

Federal

Federal Highway Administration, Division Administrator
*Federal Emergency Management Agency, Chief - Region IV
Federal Railroad Administration, Director - Office of Economic Analysis
*Federal Aviation Administration - Airports District Office
US Department of Interior, Field Supervisor - Fish and Wildlife Service
US Environmental Protection Agency, Regional Administrator - Region IV
US Army Corps of Engineers, District Engineer - Regulatory Branch
US Department of Interior, Bureau of Land Management, Director - Eastern States Office
US Department of Housing and Urban Development, Regional Environmental Officer
US Department of Interior - US Geological Survey Chief
US Department of Commerce - National Marine Fisheries Services - Habitat Conservation Division
US Department of Interior - National Park Service - Southeast Regional Office
US Department of Commerce - National Oceanic and Atmospheric Administration
US Department of Agriculture - Southern Region, Regional Forester
US Department of Interior - Bureau of Indian Affairs - Office of Trust Responsibilities
US Coast Guard - Commander (oan) - Seventh District
US Department of Health and Human Services - Center for Environmental Health and Injury Control
Office of Land Use Planning and Biological Services, Environmental Administrator

State

Florida Department of Environmental Protection, District Manager - District Office
Habitat Conservation Division, National Marine Fisheries Commission
Florida Department of Environmental Protection, West Central Florida District
Florida Department of Environmental Protection, East Central Florida District
*Florida Department of Environmental Protection, Central Florida District
Florida Department of Environmental Protection, Southwest Florida District
*Florida Department of Environmental Protection, Office of Intergovernmental Programs
*Florida Game & Fresh Water Fish Commission, Director, Office of Environmental Services
*Florida Department of State, Division of Historical Resources
*State of Florida Department of Community Affairs
Florida Department of Transportation, Manager, Environmental Management Office
Florida Department of Transportation, Federal Aid Program Coordinator

Regional

East Central Regional Planning Council, Executive Director
Central Florida Regional Planning Council, Executive Director
Tampa Bay Regional Planning Council, Executive Director
*Southwest Florida Water Management District, Executive Director
*South Florida Water Management District, Executive Director
*St. Johns River Water Management District, Executive Director

Stated below is a summary of the comments from the agencies which responded to the Advance Notification Package.

Federal Emergency Management Agency - Region IV

Comment: "Please be advised that the Flood Insurance Study (FIS) for Polk County is currently being revised. ...This data has been released in advance format to Polk County Surfacewater Management Division for independent review, comment, and possible use. ...We strongly recommend that the lowest horizontal members of all bridges be at least 1 foot above the BFE, and that the top surface of the entire roadway also be elevated above the BFE. Since I-4 is a vital link to the residents of central Florida, it is essential that it be usable as an evacuation route during hurricanes and other times of flooding."

Response: Coordination with the FEMA and the Polk County Surfacewater Management Division shows that the discreet advance FIS data is currently under review by Polk County and has not yet been approved for release. Communication with the FEMA indicates that the advanced data should not be used until approved. Phone contact with the Polk County FEMA coordinator in August 1998 indicates that the schedule for the completion of the review of the advanced data has not been determined. Because of the timing of the I-4 PD&E study, the flood plain evaluation for this project is based on the current existing published FIS. The I-4 Location Hydraulic Report and flood plain analysis has been performed using the existing published FEMA FIS data. This PD&E study will recommend that: 1) the flood plain encroachment analysis be reevaluated with the revised FIS data, once approved; 2) the lowest horizontal members of all newly constructed bridges will be at least one foot above the BFE; and 3) the entire surface of the newly constructed roadway will be elevated above the BFE.

Federal Aviation Administration - Airports District Office

Comment: "FAA interposes no objections from an aeronautical standpoint."

Response: No response necessary.

Florida Department of Environmental Protection - Central District

Comment: "The Department of Environmental Protection, Submerged Lands & Environmental Resources Program requires consent in the form of an easement for public right of way on sovereignty submerged lands pursuant to Chapter 18-21, F.A.C. Upon receipt of the Joint DEP/ACOE application for this project, our Title and Lands Record Section will identify any activity occurring on state-owned lands."

Response: As conceived, this project will not affect any sovereignty submerged lands not already controlled by the FDOT, however, a determination of the possible use of Sovereign Submerged Lands will be made prior to the application for an Environmental Resource Permit.

Florida Department of Environmental Protection - Office of Intergovernmental Programs

Comment: The FDEP indicates that the project will impact several important ecosystems including Saddle Creek, a tributary to the Peace River and a portion of the Green Swamp. Review of the Florida Natural Areas Inventory indicates there are several species listed as threatened, endangered, or species of special concern occurring within a half-mile corridor adjacent to the proposed roadway. The development of riparian/wildlife crossings at specific locations adjacent to both wetland and upland areas is recommended in order to avoid creating an impassible barrier for wildlife.

Response: An Endangered Species Biological Assessment was performed for this project to determine the potential for project impacts to critical habitat and federally or state listed species. This assessment was coordinated with the US Fish and Wildlife Service (USFWS) and the Florida Game and Fresh Water Fish Commission (FGFWFC). Wildlife undercrossings in three locations (two in the Green Swamp area and one Teneroc/Saddle Creek area) in the form of low-level bridges are included in the proposed improvements to I-4.

Florida Game and Fresh Water Fish Commission - Office of Environmental Services

Comment: "...Wetland impacts are projected to total 248.5 acres; however, no mitigation plan has yet been proposed. ...Outstanding habitat features along this route are the strands of cypress and bottom land hardwood wetlands bisected by I-4 between County Road 557 and US 27. The narrative accompanying the SAI characterizes I-4 in this area as creating 'a major construction in the surface hydrology because of...relatively few hydrologic connections between the north and south sides of the road.' ...the fragmentation of these wetland habitats by I-4 poses a potential constriction in the wetland habitats used by a wide variety of wildlife species that have been documented in a private, six-month monitoring program as being killed on I-4. Many of these are habitat dependent... In addition, habitat analyses performed by our Nongame Wildlife Program indicate that this area is rated as very high...in terms of a Biodiversity Hot Spot, contains considerable habitat designated as a Strategic habitat Conservation Area, and has a very high (40 to 50 species) Species Richness Index. ...Also of note is the western portion of the I-4 cor-

ridor that passes north of Teneroc Fish Management Area in the Saddle Creek area, east of Lakeland. Although currently rural, this area is targeted for massive development in the near future...all of which are adjacent to I-4. There are two potential restoration issues in this area. First, this area has been targeted as a Greenway...of the Florida Greenways Commission to the Governor. Second, we have recently learned that an old mining pit north of I-4 and west of State Road 33 is diverting water that may have historically drained south to Saddle Creek and, ultimately, to the Peace River, a system that is currently receiving considerable scrutiny by Southwest Florida Water Management District in terms of its water budget. ...We believe that restoration efforts may be enhanced by a link to the Green Swamp north of I-4... This project will impact the programs of at least five state or regional agencies and two local governments....Because of the complexity of agency and local government interests...we recommend that the affected agencies and local governments meet to formulate a policy regarding wetland mitigation locations and the feasibility of underpasses to present to the Water Resources Coordinating Council, and request that the Council members give their regulatory staff direction to pursue an integrated approach to these issues. ...we further recommend that the DCA be the lead agency for this policy-setting effort."

Response: The League of Environmental Organizations and the Central Florida Regional Planning Council co-sponsored a group of thirty-four agencies, government bodies, citizen groups and private consultants (I-4 Environmental Advisory Group) to review the I-4 construction proposals in Polk County from the Hillsborough County line on the west to the Osceola County line on the east. Proposed alignments and environmental impacts to wetland systems were also reviewed. The findings, conclusions and recommendations contained in the I-4 Environmental Advisory Group Report of Findings, Opportunities for Ecosystem Enhancement, March 30, 1995 should be used to guide mitigation methods, banking of mitigation, and the relationship of mitigation to the I-4 project so that new construction can enhance the function of wetland systems and the movement of wildlife.

Florida Department of State - Division of Historical Resources

Comment: "...conditioned upon the FDOT undertaking a cultural resource survey, and appropriately avoiding, minimizing, or mitigating project impacts to any identified significant archaeological or historic sites, the proposed project will have no effect on historic properties listed, or eligible for listing, in the National Register, or otherwise of historical or architectural value. If these conditions are met the project will also be consistent with the historic preservation aspects of Florida's Coastal Management Program."

Response: A Cultural Resource Assessment Survey, Revised May 1995, was conducted for the I-4 corridor. The Florida State Historic Preservation Officer concurred with the determination that none of the historic properties or archaeological sites identified in the I-4 corridor are eligible for listing in the National Register of Historic Places, or otherwise of historical or architectural value, by issuing a letter of "no effect" for this project to the FHWA, dated August 2, 1995.

State of Florida - Department of Community Affairs

Comment: Several of the reviewing agencies have recommended intergovernmental coordination to develop an ecosystem management policy, wetland mitigation and wildlife protection measures which should be included in future environmental documents prepared for this project. The Department of Community Affairs stated that the state has determined that the proposed action is consistent with the Florida Coastal management Program at this advanced notification stage.

Response: The Environmental Advisory Group (EAG) was comprised of representatives of 34 environmental organizations including federal, state and local regulatory agencies, local government, private consultants and the FDOT. The I-4 EAG was charged with the task of identifying potential wildlife undercrossings locations and potential wetland and wildlife mitigation options (including possible mitigation bank locations) along the I-4 corridor and making a unified recommendation to the FDOT.

Southwest Florida Water Management District

Comment: The District is concerned over the project's potential impacts to the Green Swamp, to wetland systems, to water flow and water quality, and potential encroachments of the 100-year floodplain. The application does not provide enough information to determine consistency with District plans, programs and policies designed to implement its statutory mandates. As such, further environmental documentation is needed to address the concerns listed above including more detailed location maps, discussions of impact avoidance and impact minimization, and possible alternative actions.

Response: The I-4 PD&E study addresses the project's potential impacts to the Green Swamp, to wetland systems, to water flow and water quality and potential encroachments of the 100-year flood plain in the Location Hydraulic Report, the Wetland Evaluation Report and the Endangered Species Biological Assessment prepared for the project. The Wetland Evaluation Report was forwarded to SWFWMD on May 1, 1998 for review. No comments were received from this agency.

South Florida Water Management District - Regulation Department

Comment: "...staff has determined that the proposed project is located outside of the jurisdictional boundaries of the SFWMD within the St. Johns River and Southwest Florida Water Management Districts. Although this particular segment of Interstate 4 (I-4) is not located within SFWMD jurisdictional boundaries, it is part of a larger FDOT proposal to widen and improve the entire I-4 corridor between Tampa and Daytona Beach. This corridor crosses the boundaries of three different FDOT districts and three different water management district. Due to the fragmentation of existing wetland systems and the interruption of historic surface water flows that has occurred as a result of the original I-4 construction (e.g., the Green Swamp, Reedy Creek, Shingle Creek) and the additional wetland impacts anticipated in connection with the improvements proposed along the entire I-4 corridor, the SFWMD recommends that the FDOT take an ecosystem approach to developing a mitigation plan for this project (coordinated with the three affected water management districts) rather than having piecemeal mitigation projects developed separately by the jurisdictional FDOT regional district."

Response: This project has been coordinated through the SJRWMD and the SWFWMD. This coordination will continue through subsequent design phases. Wetland mitigation will be accomplished in accordance with FHWA policy as contained in 23 CFR 777.11. The full range of mitigation options were considered in developing the project, including avoidance, minimization, restoration, enhancement and creation. Mitigation options include restoration, enhancement, creation and the use of S. 373.4137 F.S. (The Bronson Bill), which allows payment of $75,000 per acre to the Water Management Districts for their use in mitigating the impacts.

St. Johns River Water Management District

Comment: The major issues of concern that the District has about the floodplain and wetlands consists of the following: loss of the 10-year and 100-year floodplain, loss of wetland functions, cumulative impacts to water quality and wetland functions, and secondary impacts to water quality and wetland functions. ...the project appears to require a Management and Storage of Surfacewater (MSSW) Permit (Chapter 40C-4, F.A.C.). Also, a Wetland Resource Management Permit (Section 62-312, F.A.C.) may be required for the proposed road improvements.

Response: The I-4 PD&E study addressed the major issues of concern that the District has about the floodplain and wetlands including: loss of the 10-year and 100-year floodplain, loss of wetland functions, and secondary impacts to water quality and wetland functions in the Location Hydraulic Report and the Wetland Evaluation Report prepared for this project. All necessary permits including the Environmental Resource Permit will be applied for and obtained in the subsequent design phases of this project and prior to construction. The Wetland Evaluation Report was forwarded to SJRWMD on May 1, 1998 for review.

5.2 Interagency Coordination and Consultation

To define more completely and address the concerns of Federal and State environmental permit and review agencies, numerous contacts were made in the form of correspondence, telephone contacts, and information meetings. Provided below is a chronology of coordination meetings that have taken place on the project to meet the concerns identified at the scoping meeting and other subsequent meetings. Documentation of this coordination is found in Appendix B of the Environmental Assessment or is available in the project file.

US Fish and Wildlife Service
Florida Game and Freshwater Fish Commission
Meeting in Bartow
December 19, 1993

The meeting was held to discuss the potential for a wildlife crossing and for agency coordination. A three-year window is available for making the wildlife crossing determinations. To coordinate the efforts of the various agencies and other groups with an interest in the I-4 corridor (particularly the Green Swamp), it was decided it may be advantageous to set up a task team or committee including such agencies as USFWS, FGFWFC, SWFWMD, SJRWMD, Greenways, and others as they are identified. FDOT is committed to provide wildlife crossings wherever they can be justified. The number of crossings is not an issue, but the justification is critical.

City of Lakeland
Meeting in Bartow
March 14, 1994

The meeting was arranged to coordinate the I-4 Master Plan in Polk County and the pending Bridgewater Development of Regional Impact (DRI). Issues discussed included the documents that would be needed for the Master Plan and PD&E study in this respect. The possibility of situation of a Park-N-Ride/Multimodal Center at the Socrum Loop interchange was noted.

I-4 Environmental Advisory Group
Meeting in Lakeland
May 11, 1994

This was a kick-off meeting. The advisory group is to present their recommendations in the form of a report for potential wildlife crossing and/or mitigation banking to the FDOT. The preliminary draft report will be due at the end of August and the final report with recommendations is scheduled for the end of November. Data collection will begin to analyze the corridors to recommend locations for wildlife crossings.

Southwest Florida Water Management District
Meeting in Bartow, SWFWMD Office
June 21, 1994

The pre-design coordination meeting was held to discuss SWFWMD requirements as they apply to widening I-4 in Polk County. Items discussed were SWFWMD's role in this project, permit types and fees, water quality and quantity issues, 100-year floodplain encroachment, wetland encroachment and mitigation, erosion control, rule changes and future contact.

Coordination Meeting with City of Lakeland
Meeting in Lakeland
July 27, 1994

Items discussed were Carpenters Way Road and the CR 582/I-4 interchange. The consultant presented two options for the Carpenters Way Road overpass at I-4: 1) construct a new roadway west of the existing crossing through the wetlands; 2) construct the new roadway at the location of the existing roadway. FDOT indicated that the consultant should proceed based on the new alignment going through the wetland to the west of the existing alignment. Regarding the CR 582/I-4 interchange, six alternative interchange layouts were presented to the City. The City found two alternatives acceptable and offered suggestions relating to the alternatives. The consultant was asked to further review the acceptable alternatives with the City's suggestions. Another meeting would be schedule to discuss the alternate after a traffic analysis was completed.

US Fish and Wildlife Service
Florida Game and Fresh Water Fish Commission
Meeting in Bartow
February 3, 1995

FDOT presented an overview of geotechnical problems, namely muck pockets that would have to be spanned in the Green Swamp area. The muck pockets are in areas where the League of Environmental Organizations (LEO) states have potential for wildlife crossings. Information brought by FGFWFC supports LEO's suggestion, however the data does not justify a wildlife crossing. FDOT will do what is required to obtain a permit and might consider accommodating recommended wildlife crossings if it is reasonable to do so, but FDOT is not in a position to perform the study necessary to determine the wildlife crossing requirements.

Southwest Florida Water Management District
Meeting in Bartow
April 17, 1995

The magnitude of wetland impacts with the conventional approach to storm water treatment in Segments 5,6 and 7 was presented to SWFWMD. Enormous excavations in uplands areas next to wetlands would be required to provide the required treatment and attenuation. The alternative of providing no drainage swales in the areas where I-4 goes through wetlands was presented. This alternative would provide no storm water treatment or attenuation, but would reduce wetland impacts, floodplain impacts and construction cost. SWFWMD agreed it would make no sense to impact wetlands to construct ditches, but discharging untreated storm water runoff into wetlands is not acceptable. It was decided to schedule future meetings with SWFWMD to discuss each individual design segment in order to discuss alternatives and reach concurrence on a project-specific basis.

Florida Game and Fresh Water Fish Commission
Florida Department of Environmental Protection
St. Johns River Water Management District
Department of Community Affairs
Meeting in Bartow
May 26, 1995

The purpose of this meeting was for design consultants to present concepts for the proposed wildlife crossing to FGFWFC to ensure that concepts being developed will meet agency requirements. In Segment 6, bridges are proposed at two locations which will function as wildlife crossings as well as span deep muck pockets. In Segment 4, wildlife crossings are proposed to be located near the eastern boundary of a large wetland area between SR 33 and the Polk County Parkway interchange. A drainage channel will be constructed under the bridges to accommodate drainage that is currently being carried in the existing box culvert. Span lengths of less than 12.2 m (40.0 ft) will not be recommended. It was decided that vertical clearance will be 2.5 m (8.0 ft) above seasonal high water. Type of bridge structures, slope and width of maintenance berms and slope to existing ground specifications were discussed in detail. Fencing issues will be decided in the future.

Southwest Florida Water Management District
Meeting in Bartow
June 22, 1995

The purpose of the meeting was for SWFWMD to advise FDOT about mitigation banking conditions and for the FDOT to get an acceptable plan of action to address wetland mitigation in the I-4 corridor of Polk Corridor.

Federal Highway Administration
Meeting in Bartow
August 17, 1995

The purpose of the meeting was to discuss the status on the following topics: PD&E study and preliminary design proceeding concurrently; Master Plan and PD&E study; design current status; design scope reduction; access management issues; slip ramps, aesthetics; and US 27 storm water ponds.

Federal Highway Administration
Meeting in Bartow
February 12, 1996

The purpose of the meeting was to discuss the status on the following topics: PD&E study and preliminary design proceeding concurrently; PD&E study; design current status; US 27 interchange concept; proposed pond at I-4/Memorial Boulevard interchange; and aesthetics.

Federal Highway Administration
Meeting in Bartow
May 3, 1996

The purpose of the meeting was to discuss the status of the following topics: PD&E study; design status; Memorial Boulevard interchange; US 98 interchange; and aesthetics. Coordination between FDOT Districts 1, 5 and 7 was also discussed.

City of Lakeland - Planning
Meeting in City of Lakeland at Pat Steed's Office
February 4, 1997

The purpose of the meeting was to discuss the CR 582 interchange and the subsequent alternative being developed. The fact that only one median opening is proposed on CR 582 between SR 33 and the westbound ramp terminals was discussed. The SR 33/North Florida Avenue intersection was also briefly discussed.

Utilities and Railroads Coordination - Utilities cross the I-4 corridor at almost every interchange and grade separation. Major electrical transmission lines, gas transmission lines, water mains and cross-country telephone cables parallel the corridor in close proximity to the right-of-way and may require relocation due to the proposed improvements to I-4. Utility locations and relocation costs were obtained using the Utility Request Package processed through the FDOT District Utility Engineer and direct contact with the utility companies.

One rail crossing is located within the project limits. The CSX Railroad overpass west of the Kathleen Road interchange will require replacement to accommodate the proposed I-4 typical section. The replacement structure will be located immediately to the west of and parallel to the existing structure. The alignment and location of the proposed replacement rail overpass structure has been coordinated with the CSX Railroad through the FDOT District Railroad Coordinator.

The project team coordinated with state and local agencies and various land developers along the project corridor through meetings, teleconferences and various forms of correspondence throughout the development of the I-4 Master Plan and subsequent PD&E study. Presentations were also made to the Polk County Transportation Planning Organization (TPO) Citizens and Technical Advisory Committees to discuss the status of the I-4 Master Plan.

The FDOT's Interstate Policy limits the expansion of the interstate typical section to ten lanes, consisting of six general use lanes physically separated from four special use lanes and a transit envelope to facilitate the development of mass transit modes of transportation. Two design evaluation workshops

(charettes) were held to define viable alternatives for the first stage of development toward the ultimate interstate section and to evaluate the alternatives utilizing screening criteria.

The Tier I Evaluation Workshop (charette) was held on October 28, 1993 with representatives from the FDOT Districts 1, 5, 7, Central and the Turnpike; the Federal Highway Administration; the Florida Highway Patrol and the consultant project team. The Tier II Evaluation Workshop (charette) was held on February 16 & 17, 1994.

Throughout the development of the I-4 Master Plan and PD&E study, informational meetings were held between the project consultants, local governments and the FDOT. The Project Team had also been involved in quarterly I-4 corridor meetings with representatives of FDOT Central Office, Districts 1, 5 and 7 and their respective study consultants. The ongoing communication made for an easy transition from the Master Plan phase to the PD&E Study phase of this project.

A local coordination meeting was held on January 31, 1994 to allow local governments the opportunity for input into the development of the I-4 Master Plan. A presentation was made to the Polk County TPO on March 10, 1994 to discuss the status of the I-4 Master Plan. Additional informational meetings were held with the TPO Citizens Advisory Committee on February 22, 1994 and September 22, 1998 and with the TPO Technical Advisory Committee on February 24, 1994 and September 24, 1998. A coordination meeting was held on February 22, 1994 with the Central Florida Regional Planning Council to discuss organizing a team to identify potential wildlife crossings and potential wetland mitigation bank locations along the I-4 corridor.

A kick-off meeting was held on May 11, 1994 with the I-4 Environmental Advisory Group (EAG) to discuss the purpose and schedule of events. The purpose of the I-4 EAG was to involve the local environmental community in the decision making process for two sensitive issues along the I-4 corridor, wetland and wildlife mitigation banking and wildlife corridor connections (undercrossings). The makeup of the group included representatives of thirty-four (34) organizations including regulatory and advisory agencies, state, local and regional government, environmental interest groups, and private consultants. The I-4 EAG was headed by the League of Environmental Organizations and the Central Florida Regional Planning Council.

Threatened and endangered species agency coordination meetings were held with the FDOT, project consultants and various regulatory agencies on September 23, 1994, January 20, 1995, January 24, 1995 and February 3, 1995 to identify potential threatened and endangered species within the project corridor, discuss potential wildlife crossings and to solicit comments and input from the environmental agencies.

A series of informative newsletters were prepared and provided to the public through direct mailings. The newsletters presented a summary of previous activities and notification of upcoming events related to this project.

5.3 Public Workshop Summary

Public workshops were held on January 26, 1995 Calvary Baptist Church in Lakeland and on January 31, 1995 at the Comfort Inn at I-4 and US 27 to inform the community of proposed improvements to I-4. Notification was accomplished by direct mail to elected and appointed officials in Polk County and the City of Lakeland and to property owners whose property lies in whole or in part within 91.4 m (300 ft)

from the centerline of the proposed project. Legal display advertisements for the workshops were published on Sunday, January 22, 1995 in the Polk County edition of the Tampa Tribune and the Lakeland Ledger.

About 232 persons representing the citizens and the business community attended the two, four-hour public workshops. Representatives from the FDOT were present to discuss the proposed I-4 improvements and the impacts to the community and environment. This informal workshop was held to provide the general public with information about the project, the various alternatives under consideration, project scheduling, the status of the necessary studies and environmental documentation, and solicitation of comments from the general public. Eleven comments forms were received requesting to be added to the mailing list. Sixteen requests were received for additional information including aerial maps and segment information. The FDOT received five comments regarding noise. The FDOT received four comments regarding right-of-way cost and impact considerations. The FDOT received two comments supporting the project, both of which feel that this project "is long over due ...and the sooner the better."

5.4 Public Hearing Summary

Formal public hearings were conducted after FHWA approval of the Environmental Assessment. Public Hearings were held on October 12, 1998 and October 13, 1998, at the Florida Southgate Inn, I-4 @ US 27, Exit 23, 5414 US 27 North, Davenport, Florida and at the Calvary Baptist Church, 1945 North Florida Avenue, Lakeland, Florida, respectively. The hearings were held to inform the public of the preliminary results of the study and to give the public the opportunity to express their views regarding specific location, design, socio-economic effects and environmental impacts associated with the project. Mr. Bryan Williams, District Environmental Manager for the FDOT, District 1, presided at the hearings. The FDOT and its consultants were on hand in the meeting room prior to the formal proceedings to informally discuss the project with the general public. Approximately 295 persons attended the hearings.

Notification was accomplished by direct mail to elected and appointed officials in Polk County and the City of Lakeland and to property owners whose property lies in whole or in part within (300 ft) from the centerline of the proposed project. Legal display advertisements for the hearings were published in the Tampa Tribune - Polk Edition on September 19, 1998 and October 3, 1998; and in The Ledger (a daily newspaper in Lakeland) on September 22, 1998 and October 6, 1998.

Following introductory remarks, Mr. Williams introduced an audio-visual presentation which summarized the need for the facility and the relative merits of the alternates based on their levels of traffic service and socio-economic and environmental impacts. Included within the presentation was a description of right-of-way acquisition procedures with particular reference to State and Federal relocation assistance programs. Following the presentation, the next portion of the hearing was devoted to comments and questions.

Specific questions and comments raised at the public hearing were answered at the hearing, in this report, by letter, or during informal discussions with concerned individuals. Nine persons spoke for the public record at the hearings and 42 written statements (some providing more than one comment), letters, and requests for exhibits were received within the time period allotted for comments. The following summarizes the substantive comments made at the public hearing.

Seven requests were received for copies of exhibits, maps and/or project corridor video tapes. One comment was received in support of the project. One comment was received regarding provisions for additional rest areas. Two comments were received regarding access to and from Memorial Boulevard. One comment was received regarding Socrum Loop traffic flow. One comment was received regarding the 10th Street overpass. One question was asked at the public hearing regarding drainage involving property on Elliott Street. One comment was received regarding Heller Road and the proposed closure of the full median opening on US 27 adjacent to this road. One comment was received regarding the widening project of Highway US 98 North. Three comments were received regarding property encroachment. One comment was received regarding County-owned property. One comment was received regarding property values. One comment was received regarding land depreciation and the tax structure. Twenty-three comments were received regarding the existing noise levels of the traffic on I-4. Eight comments were received regarding the SR 559 interchange.

For additional information regarding the Public Involvement Program, refer to the Comments and Coordination Report, November 1998.

5.5 Response to Wetland Study Review

Copies of the Wetland Evaluation Report were forwarded on May 1, 1998 to the following regulatory agencies for review and comment:

US Army Corps of Engineers (USACOE)
US Fish and Wildlife Service (USFWS)
National Marine Fisheries Service (NMFS)
Florida Department of Environmental Protection (FDEP)
Southwest Florida Water Management District (SWFWMD)
St. Johns River Water Management District (SJRWMD)
Florida Game and Fresh Water Fish Commission (FGFWFC)
US Environmental Protection Agency (USEPA)

Responses were received from the USFWS, the NMFS and the SJRWMD.

US Fish and Wildlife Service

Comment: "We will review the information and provide comments to the Department of Army permit during the public notice comment period."

Response: No response necessary.

National Marine Fisheries Service

Comment: "...we have determined that the resources affected are not ones for which the NMFS is responsible and therefore, we have no comments to provide regarding this project."

Response: No response necessary.

St. Johns River Water Management District

Comment: "...staff will need to know the exact acreage of wetland encroachments occurring within the SJRWMD boundaries." ... "Special consideration to the following issues shall be given when evaluating the improvements within this area (Green Swamp Area of Critical State Concern), including (but not limited to): aquifer recharge, floodplain impacts, wildlife movement and fragmentation." ... "Please be advised that an Environmental Resource Permit (ERP) will be required for the proposed improvements." ... "A title determination (for use of Sovereign Submerged Lands) must be made by the Title and Lands Record Section in Tallahassee."

Response: The exact acreage of wetland encroachment will be determined during the subsequent design phase of this project and will be provided during the ERP application process. Special consideration has been given to the area of the Green Swamp. Aquifer recharge will be addressed in the ERP application process. Floodplain encroachments have been estimated in the Location Hydraulics Report and any loss of floodplain will be compensated for during the design phase of this project. Wildlife undercrossings in the area of the Green Swamp have been included in this project and coordinated with the FGFWFC and the USFWS and the water management districts through the I-4 Environmental Advisory Group. A determination of the use of Sovereign Submerged Lands will be made prior to the application for an ERP.

Federal Highway Administration

Comment: In a call report from the FHWA, dated September 21, 1994, it is stated that FHWA does not want any wet ponds or dry ponds within the interstate limited access right-of-way. It is acceptable to leave existing wetlands within the interstate limited access right-of-way, but FHWA does not want any improvements made to the existing wetlands or increased watershed to the existing wetlands. Any wetlands within the existing interstate limited access right-of-way must be protected by guardrail if standing water is within the clear recovery area of the interstate travel lanes.

Response: Storm water management pond siting will be determined in the subsequent design phase of this project through coordination with the FHWA.

6.0 COMMITMENTS AND RECOMMENDATIONS

6.1 Commitments

To minimize the impacts of this project on the human and natural environment, the Department is committed to the following measures:

1. Wetland impacts which will result from the construction of this project will be mitigated pursuant to 373.4137 F.S. to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.S. 1344. The FDOT is committed to minimize the temporary impacts to wetlands within the right-of-way due to clearing activities associated with the construction of the proposed improvements.

2. Wildlife and Habitat - The FDOT is committed to provide the opportunity for wildlife corridor enhancement by constructing low-level bridges at three locations in Polk County. The locations are shown on the Concept Plans. These structures will be designed in accordance with the criteria established through coordination with the USFWS and the FGFWFC to allow for their use as **wildlife undercrossings**. The locations of these structures were determined through a cooperative effort of regulatory and advisory agencies, local environmental interest groups, private consultants, local, state and regional government and the FDOT.

   The FDOT is committed to mitigate for potential loss of habitat of the **Florida scrub jay** through the use of the Highlands County Upland Mitigation Bank property at a ratio of 2:1 for impacts which may occur to scrub jay territories at the time of construction.

   A. Since the construction phase of this project is not included in the current FDOT 5-year work program and because of the anticipated resulting delay in construction of the proposed I-4 improvements, a resurvey of the project corridor for the presence of listed species will be made prior to the construction phase of this project.

   B. The eastern indigo snake (Drymarchon corais couperi) could be present in the project area. In order to minimize harm to this species, the Florida Department of Transportation has committed to implement the following protection measures:

      1. The FDOT shall provide eastern indigo snake educational information as contained int he approved District One educational plan to construction employees prior to the initiation of any clearing, construction or gopher tortoise relocation activities. The FDOT District One educational exhibit shall be posted at sites immediately accessible to all employees.

      2. All construction activities shall cease in the immediate vicinity of any live eastern indigo snake found within the project area. Work may resume after the snake or snakes are allowed to leave the area on their own.

      3. Location of live sightings shall be reported to the USFWS Vero Beach Office at (561) 562-3909.

4. If a dead eastern indigo snake is found on the project site, the snake shall be frozen as soon as possible and FDOT shall notify the Vero Beach Field Office immediately for further instructions.

3. The FDOT is committed to the construction of feasible noise abatement measures at the specific locations (2, 6, 7, 11, 16 & 17) contingent on the following:

- the barrier is subjected to a detailed noise analysis during the design phase of this project and the analysis supports the need for the abatement;
- reasonable cost analyses indicates that the economic cost of the barrier will not exceed the guidelines;
- the affected property owners are surveyed and a positive desire for the barriers (including type, height, location and access requirements) is obtained;
- preferences regarding compatibility with adjacent land uses as addressed by local officials has been noted; and
- all safety and engineering aspects of the barrier are reviewed and approved as they relate to the roadway user and the adjacent property owners.

6.2 Recommendations

The recommended improvements to I-4 consist of upgrading the existing four-lane roadway to a ten-lane divided interstate facility in accordance with the FDOT District One policy typical section described below. The recommended alignment is based on the environmental avoidance and minimization strategy developed for the I-4 corridor.

I-4 Mainline Typical Sections - The core of the recommended typical sections for this project consists of three 3.6 m (12 ft) general purpose travel lanes each way, two 3.6 m (12 ft) special use travel lanes each way and a minimum 20.0 m (66 ft) median to provide for the future inclusion of rail service. The special use lanes would be separated from the general purpose lanes by two shoulders and a barrier wall totaling 7.8 m (26 ft). The differences in the two recommended typical sections are the classification (rural or urban) and the border dimensions to the right-of-way. See Section 9.2 of the Preliminary Engineering Report, June 1998, Revised August 1998.

1. An urban interstate typical section to be constructed within the existing 91.4 m (300 ft) right-of-way is recommended from west of Memorial Boulevard to east of the SR 33 interchange (Segments 2, 8 and 3). See Figure 1-2.

2. A rural interstate typical section contained within a minimum 128.8 m (422.6 ft) right-of-way is recommended from east of the SR 33 interchange to the Polk/Osceola County line (Segments 4, 5, 6, 9 and 7). See Figure 1-3.

Lighting - In response to comments received from the public at the Public Hearings held for this project on October 12 and 13, 1998, recommendation for low-level, directed and shielded lighting at the SR 559 interchange will be forwarded to the design phase of this project.

Appendix A
FHWA Letter February 9, 1995
Concurring With Master Plan

U.S. Department of Transportation
Federal Highway Administration

Florida Division Office

227 N. Bronough St.
Room 2015
Tallahassee, Florida 32301

February 9, 1995

IN REPLY REFER TO: HDA-FL

Mr. Frank Carlile
Assistant Secretary for Transportation Policy
Florida Department of Transportation
Tallahassee, Florida

Dear Mr. Carlile:

Subject: Florida - FAP No. ACDH-4-1(130)25
State Project No. 16320-1402
Interstate 4 Multimodal Master Plan
Polk County

Your January 20, 1995 letter requested our concurrence of the Interstate 4 Multimodal Master Plan for Polk County. Since all of our previous concerns were satisfied with your November 9, 1994 response, we concur with the subject Master Plan. This concurrence is given subject to compliance with applicable Federal requirements.

Your letter also requested approval for additional lanes to be constructed with the Master Plan on Interstate 4 in Polk County. At the present time, we can only grant approval for one additional lane in each direction since the Master Plans for Districts One and Five have not been completed or developed.

We look forward to working with you on the development of the environmental document and interchange modification reports (IMR's). For the IMR's, we highly encourage a system-level approach since each interchange modification has a tremendous affect on the entire Interstate operation in the area. The detailed aspects of this approach will have to be resolved, including the grouping of the IMR's based upon their planned construction and the associated Interstate improvements needed to support the new or improved interchange modifications.

Sincerely yours,

J. R. Skinner
Division Administrator

Florida Department of Transportation
ENVIRONMENTAL DETERMINATION

1. GENERAL INFORMATION

County: Polk
Project Name: I-4 PD&E Study
Project Limits: From West of Memorial Boulevard (SR 546) to the Polk/Osceola County line

Project Numbers:	16320-1402	ACDH-4-1(130)25	1147948
	State	Federal	WPI

2. PROJECT DESCRIPTION

a. **Existing:** The project limits for the Interstate 4 (I-4) corridor are from west of Memorial Boulevard (SR 546) to the Polk/Osceola County line, a distance of about 47.4 km (29.5 mi); see Figure No. 1. See page 4 for continuation of Existing discussion.

Need for Project: The Florida Department of Transportation (FDOT) proposes to improve the operational and roadway network characteristics of I-4 from west of Memorial Boulevard to the Polk/Osceola County line, in Polk County, Florida (see Figure No. 1). The project is part of an improvement program which includes all of I-4 from Interstate 275 in Tampa to Interstate 95 near Daytona Beach. See page 4 for continuation of Need for Project discussion.

b. **Proposed Improvements:** The proposed improvements include widening of I-4 to ten (10) lanes: six (6) general purpose lanes physically separated from four (4) special use lanes and sufficient right-of-way for future inclusion of rail service in the median. See page 4 for continuation of Proposed Improvements discussion.

3. CLASS OF ACTION

a. **Class of Action**
[X] Environmental Assessment
[ ] Environmental Impact
[ ] Type 2 Categorical Exclusion

b. **Other Actions (ONLY FOR EA or EIS)**
[ ] Section 4(f) Statement
[ ] Section 106 Consultation
[X] Endangered Species Assessment

c. **Public Involvement**

1. [ ] A public hearing is not required, therefore, approval of this Type 2 Categorical Exclusion constitutes acceptance of the location and design concepts for this project.
2. [ ] A public hearing was held on _____ and a transcript is included with the environmental determination. Approval of this Type 2 Categorical Exclusion determination constitutes acceptance of the location and design concepts for this project.
   [ ] An opportunity for a public hearing was afforded and a certification of opportunity is included with the environmental determination. Approval of the Type 2 Categorical Exclusion determination constitutes acceptance of the location and design concepts for this project.
3. [ ] A public hearing will be held and the public hearing transcript will be provided at a later date. Approval of this Type 2 Categorical Exclusion DOES NOT constitute acceptance of the project's location and design concepts.
   [ ] An opportunity for a public hearing will be afforded and a certification of opportunity will be provided at a later date. Approval of this Type 2 Categorical Exclusion determination DOES NOT constitute acceptance of the project's location and design concepts.

d. **Cooperating Agency:** [X] COE [ ] USCG [ ] FWS [ ] EPA [ ] NMFS [ ] None

4. REVIEWER'S SIGNATURE

FDOT Project Engineer	11/28/95 Date
FDOT Environmental Specialist	11/28/95 Date
FHWA Area Engineer	4/22/96 Date

5. FHWA CONCURRENCE

(For) Division Administrator	4/22/96 Date

Appendix B
Comments, Correspondence, Meeting Minutes

Federal Emergency Management Agency
Region IV
1371 Peachtree Street, NE, Suite 700
Atlanta, GA 30309

February 9, 1995

Mr. C. O. Morgan, P.E.
District Environmental Management Engineer
Florida Department of Transportation
P.O. Box 1249
Bartow, Florida 33831-1249

Reference: Advance Notification, Work Program No. 1147948
Interstate 4, Polk County, Florida

Dear Mr. Morgan:

Thank you for the opportunity of commenting on the proposed widening of Interstate 4, through Polk County. Please be advised that the Flood Insurance Study (FIS) for Polk County is currently being revised. Last July our contractor, Engineering Methods and Applications of Jacksonville, completed a re-study of the flood hazards in several areas of Polk County, including the I-4 corridor. Floodways and base flood elevations (BFEs) have been developed for several streams not included in the original FIS.

This data has been released in advance format to Polk County Surfacewater Management Division for independent review, comment, and possible use. The preliminary revised Flood Insurance Rate Maps (FIRMs) and FIS text are being prepared but have been delayed due to problems with the Geographic Information System data being obtained from Polk County. A release date has not yet been scheduled.

Once the preliminary FIRMs and FIS are released, or Polk County accepts the advance data, this data is to be used for regulatory purposes, unless appealed. The planning for the I-4 corridor must take this new data into account.

We have the following additional comments. We strongly recommend that the lowest horizontal members of all bridges be at least 1 foot above the BFE, and that the top surface of the entire roadway also be elevated above the BFE. Since I-4 is a vital link to the residents of central Florida, it is essential that it be usable as an evacuation route during hurricanes and other times of flooding.

For further information, we have enclosed copies of our "No-rise Procedures," and the "Procedures for Coordinating Highway Encroachments on Floodplains with FEMA." Should questions arise during the design process, please feel free to contact our staff planner for the area, Steven Randolph, at (404) 853-4420, or Mark Vieira, staff engineer, at (404) 853-4450.

Sincerely,

John C. Heard, Chief
Mitigation Programs Branch
Mitigation Division

Enclosures (2)

ENGINEERING "NO-RISE" CERTIFICATION

This is to certify that I am duly qualified engineer licensed to practice in the State of _____.

It is to further certify that the attached technical data supports the fact that proposed _____

_____ will not impact
(Name of Development)

the 100-year flood elevations, floodway elevations and floodway widths on _____
(Name of Stream)

at published sections in the Flood Insurance Study for

_____, dated
(Name of Community)

_____ and will not impact

the 100-year flood elevations, floodway elevations, and floodway widths at unpublished cross-sections in the vicinity of the proposed development.

_____ (Date)

_____ (Signature)

_____ (Title)

SEAL:

_____ (Address)

FEMA, NTHD
8/91

Federal Emergency Management Agency
Region IV
1371 Peachtree Street, NE, Suite 700
Atlanta, GA 30309

R-4

1/92

PROCEDURES FOR "NO-RISE" CERTIFICATION FOR PROPOSED DEVELOPMENTS IN REGULATORY FLOODWAYS

Section 60.3 (d) (3) of the National Flood Insurance Program (NFIP) regulations states that a community shall "prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base (100-year) flood discharge."

Prior to issuing any building grading or development permits involving activities in a regulatory floodway, the community must obtain a certification stating the proposed development will not impact the pre-project base flood elevations, floodway elevations, or floodway data widths. The certification should be obtained from the permittee and be signed and sealed by a professional engineer.

The engineering or "no-rise" certification must be supported by technical data. The supporting technical data should be based upon the standard step-backwater computer model utilized to develop the 100-year floodway shown on the community's effective Flood Insurance Rate Map or Flood Boundary and Floodway Map (FBFM) and the results tabulated in the community's Flood Insurance Study (FIS).

Although communities are required to review and approve the "no-rise" submittals, they may request technical assistance and review from the FEMA regional office. However, if this alternative is chosen, the community must review the technical submittal package and verify that all supporting data, listed in the following paragraphs, are included in the package before forwarding to FEMA.

To support a "no-rise" certification for proposed developments encroaching into the regulatory floodway, a community will require that the following procedures be followed:

Currently Effective Model

1. Furnish a written request for the step-backwater computer model for the specified stream and community, identifying the limits of the requested data. A fee will be assessed for providing the data. Send data requests to:

   Federal Emergency Management Agency
   1371 Peachtree Street N.E., Suite 735
   Atlanta, Georgia 30309

   or to:

   FIS Information Specialist
   Dewberry & Davis
   8401 Arlington Boulevard
   Fairfax, Virginia 22031-4666

Duplicate Effective Model

2. Upon receipt of the step-backwater computer model, the engineer should run the original step-backwater model to duplicate the data in the effective FIS.

Existing Conditions Model

3. Revise the original step-backwater model to reflect site specific existing conditions by adding new cross-sections (two or more) in the vicinity of the proposed development, without the proposed development in place. Floodway limits should be manually set at the new cross-section locations by measuring from the effective FIRM or FBFM. The cumulative reach lengths of the stream should also remain unchanged. The results of these analyses will indicate the 100-year floodway elevations for revised existing conditions at the proposed project site.

Proposed Conditions Model

4. Modify the revised existing conditions model to reflect the proposed development at the new cross-sections, while retaining the currently adopted floodway widths. The overbank roughness coefficients should remain the same unless a reasonable explanation of how the proposed development will impact Manning's "n" values should be included with the supporting data. The results of this floodway run will indicate the 100-year floodway elevations for proposed conditions at the project site. These results must indicate NO impact on the 100-year flood elevations, floodway elevations, or floodway widths shown in the Duplicate Effective Model or in the Existing Conditions Model.

The original FIS model, the duplicate effective FIS model, the revised existing conditions model, and the proposed conditions model should all produce the same exact results.

The "no-rise" supporting data and a copy of the engineering certification must be submitted to and reviewed by the appropriate community official prior to issuing a permit.

The "no-rise" supporting data should include, but may not be limited to:

a. Duplicate of the original FIS step-backwater model printout or floppy disk.

b. Revised existing conditions step-backwater model.

c. Proposed conditions step-backwater model.

d. FIRM and topographic map, showing floodplain and floodway, the additional cross-sections, the site location with the proposed topographic modification superimposed onto the maps, and a photocopy of the effective FIRM or FBFM showing the current regulatory floodway.

e. Documentation clearly stating analysis procedures. All modifications made to the original FIS model to represent revised existing conditions, as well as

those made to the revised existing conditions model to represent proposed conditions, should be well documented and submitted with all supporting data.

f. Copy of effective Floodway Data Table copied from the FIS report.

g. Statement defining source of additional cross-section topographic data and supporting information.

h. Cross-section plots, of the added cross sections, for revised existing and proposed conditions.

i. Certified planimetric (boundary survey) information indicating the location of structures on the property.

j. Copy of the microfiche, or other applicable source, from which input for original FIS HEC-2 model was taken.

k. Floppy disk with all input files.

l. Printout of output files from EDIT runs for all three floodway models.

The engineering "no-rise" certification and supporting technical data must stipulate NO impact on the 100-year flood elevations, floodway elevations, or floodway widths at the new cross-sections and at all existing cross-sections anywhere in the model. Therefore, the revised computer model should be run for a sufficient distance (usually one mile, depending on hydraulic slope of the stream) upstream and downstream of the development site to insure proper "no-rise" certification.

Attached is a sample "no-rise" certification form that can be completed by a registered professional engineer and supplied to the community along with the supporting technical data when applying for a development permit.

DRAFT

Procedures for Coordination Highway Encroachments on Floodplains With FEMA

The local community with land use jurisdiction, whether it is a city, county, or State, has responsibility for enforcing the National Flood Insurance Program (NFIP) regulations in the community that is participating in the NFIP. Most NFIP communities have established a permit requirement for all development within the 100-year floodplain. Consistency with the NFIP regulations is a requirement for Federal-aid highway projects involving regulatory floodways. The community is responsible for submitting requests to the Federal Emergency Management Agency (FEMA) for amendments to NFIP ordinances and maps in that community should it be necessary. Determination of the status of a community's participation in the NFIP and review of applicable NFIP maps and ordinances are essential first steps in conducting site-specific hydraulic studies and preparing environmental documents.

Where NFIP maps are available, their use is mandatory in determining whether a highway location alternative will include an encroachment on the 100-year floodplain. Three types of NFIP maps are published: (1) a Flood Hazard Boundary Map (FHBM), (2) a Flood Boundary and Floodway Map (FBFM), and (3) a Flood Insurance Rate Map (FIRM). A FHBM is not based on a detailed hydraulic study therefore, the floodplain boundaries shown are approximate. A FBFM is derived from a detailed hydraulic study for accurate flood data. The hydraulic data is available through the regional office of FEMA. This is in the form of computer input data for calculating water surface profiles. The FIRM is produced at the same time using the same hydraulic model with base flood elevations and flood zone designations.

Communities in the regular program of the NFIP have had detailed flood insurance studies performed. In these communities the NFIP map will be a FIRM and in the majority of cases, a regulatory floodway is in effect.

Communities in the emergency program of the NFIP usually have not had a detailed Flood Insurance Study (FIS) and only limited floodplain data is available. In this case, the community NFIP map will be a FHBM and there will be no regulatory floodways established.

Other possibilities are: (1) the community is not in a FEMA identified flood hazard area and thus, there is no NFIP map, (2) a FHBM, FIRM, or FBFM is available but the community is not participating in the NFIP, (3) a community is in the process of converting from the emergency program to the regular program and a detailed FIS is underway, or (4) a community is participating in the regular program, the NFIP map is a FIRM, but no regulatory floodway has been established. Information on community participation in the NFIP is provided in the "National Flood Insurance Program Community Status Book" which is available from the State Floodplain Coordinator in each state.

Coordination With FEMA:

It is intended that there should be highway agency coordination with FEMA in situations where administrative determinations are needed involving a regulatory floodway or where flood risks in NFIP communities are significantly impacted. The circumstances which would ordinarily require coordination with FEMA are:

1. a proposed crossing encroaches on a regulatory floodway and would require an amendment to the FBFM.

2. a proposed crossing encroaches on a floodplain where a detailed study has been performed but no floodway designated and the maximum 1 foot increase in the base flood elevation would be exceeded.

3. a community is expected to enter into the regular program within a reasonable period and a detailed FIS is underway.

4. a community is in the process of being restudied and the data has not been released for public use.

Highway Encroachments With Regulatory Floodways:

In many situations it is possible to design and construct highways in a cost-effective manner such that their components are excluded from the floodway. This is the simplest way to be consistent with the regulations and should be the initial alternative evaluated. If a project encroaches on the floodway but has a very minor effect on the floodway water surface elevation (such as piers in the floodway), the project may be considered as being consistent with the regulations if hydraulic conditions can be improved so that no water surface elevation increase is reflected in the computer output for the new conditions.

Revision of Regulatory Floodways:

Where it is not cost-effective to design a highway crossing to avoid encroachment on a floodway, a second alternative would be a modification of the floodway itself. The community must be willing to accept an alternative floodway configuration to accommodate a proposed crossing provided NFIP the allowable surcharge in the base flood elevations (BFEs) are not exceeded. This approach is useful where the highway crossing does not cause more than a 1 foot rise in the BFEs. In some cases, it may be possible to enlarge the floodway or increase conveyance in the floodway above and below the crossing in order to allow greater encroachment.

The responsibility for demonstrating that an alternative floodway configuration meets NFIP requirements rests with the community. However, this responsibility may be borne by the agency proposing to construct the highway crossing. Floodway revisions must be based on the hydraulic model which was used to develop the floodway in effect and updated to reflect existing encroachment conditions. This will allow determination of the increase in the BFEs that has been caused by encroachments since the original floodway was established. Alternative floodway configurations may than be analyzed.

Base flood elevation increases are referenced to the profile obtained for existing conditions when the floodway was first established.

Data to submit to FEMA in support of a floodway revision request should include but not limited to:

1. A concise statement indicating the nature and extent of the proposed revision request for the FIRM/FBFM.

2. A brief statement describing the methodology used to determine hydrologic and/or hydraulic parameter (revised existing or proposed).

3. Hydraulic analysis (computer model - input and output) which duplicate the hydraulic analysis used for the effective FIS (baseline model) for the 100-year flood frequency and floodway.

4. New/Revised hydraulic analysis (computer model - input and output) for <u>existing</u> conditions for the 100-year flood frequency and floodway.

5. New/Revised hydraulic analysis (computer model - input and output) for <u>proposed</u> conditions for the 100-year flood frequency and floodway.

6. Annotated FIRM and FBFM showing the site location with revised existing and/or proposed 100- and 500 year flood boundaries and 100-year floodway.

7. Annotated FIS Floodway Data Table(s) showing revised existing and/or proposed floodway data.

The revised and current data required above should extend far enough upstream and downstream of the floodway revision area to tie back into the floodway and profiles using sound hydraulic engineering practices.

If the input data for the original hydraulic model is unavailable, a model should be developed duplicating the original data. A new model should be established using the original cross-section topographic information, where possible, and the discharges used in the FIS to establish the floodway. The model should then be run confining the effective flow area to the currently established floodway limits and calibrated within 0.10 foot to reproduce the "With Floodway" elevations provided in the Floodway Data Table of the effective FIS. Floodway revisions may then be evaluated using the procedures outlined above.

<u>Floodway Encroachments Exceeding Allowable Surcharge</u>:

When it would inappropriate to design a highway crossing to design a highway crossing to avoid encroachment on the floodway and where the floodway cannot be modified so that the structure could be excluded, FEMA will approve an alternate floodway with backwater in excess of the 1 foot maximum surcharge. The following conditions must be met:

1. A site-specific hydraulic study has been performed in accordance with Federal-Aid Highway Program Manual (FHPM) 6-7-3-2 "Location and Hydraulic Design of Encroachments on Floodplains" (23 CFR 650, Subpart A) and FHWA finds the encroachment is the only practical alternative.

2. The constructing agency has made appropriate arrangements with affected property owners and the community to obtain flooding easements or compensate them for future flood losses due to the effects of the structure.

3. The constructing agency has made appropriate arrangements to assure that in the National Flood Insurance Program and Federal Insurance Administration? do not incur any liability for additional future losses to existing which are insured under the Program and grandfathered in under the flood zones existing prior to the construction of the structure.

4. Prior to initiating construction, the constructing agency provides FEMA with revised flood profiles, floodway and floodplain maps, and supporting technical data necessary for FEMA to issue revised FIRMs and FBFM for the affected area upon completion of the structure.

Highway Encroachments on a Floodplain Without a Floodway:

In communities where a detailed FIS has been performed but no regulatory floodway designated, the highway crossing should be designed to acccmmodate the cumulative effects of the proposed development, when combined with all other existing development and anticipated development that will not BFEs more than a 1 foot at any point within the community as stated in Section 60.3 (c)(10) of NFIP regulations. Technical data supporting the increased flood elevations should be submitted to the local community for review. Where it is inappropriate to design the highway crossing and meet the allowable surcharge, the procedures outlined under Floodway Encroachment Exceeding the Allowable Surcharge should be followed to request a revision for the BFEs.

Highway Encroachment an a FHBM Floodplain:

In communities where detailed flood elevations have not been established, the highway agency must generate its own technical data to determine the BFEs and design encroachments in accordance with FHPM 6-7-3-2. Base flood elevations should be furnished to the community and coordination with FEMA as outlined previously where the increase in BFEs exceeds the 1 foot allowable surcharge in the vicinity of insurable structures.

Highway Encroachments on Unidentified Floodplains:

Encroachments that are outside of NFIP communities or NFIP identified flood hazard areas should be designed in accordance with FHPM 6-7-3-2- of the Federal Highway Administration.

To Obtain FEMA Publications:

1. To obtain FHBMs, FIRMs, FBFMs and the FIS text book, contact:

   National Flood Insurance Program
   P. O. Box 499
   Lanham, Maryland 20706
   (800) 333-1363 (toll free)

2. To request assistance with or obtain the FHBMs, FIRMs, FBFMs and the FIS text book, and for the status of the community eligibility, contact the State Floodplain Coordinator for the NFIP in each state.

FLORIDA DEPARTMENT OF TRANSPORTATION

LAWTON CHILES
GOVERNOR

BEN G. WATTS
SECRETARY

FEB 0 6 1995

Ray Mo

District Environmental
Management Office
Post Office Box 1249
Bartow, Florida 33831-1249
February 1, 1995

SVERDRUP		
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KWD:		
PROJ:		

Ms. Suzanne Traub-Metlay, Director
~~Ms. Janice L. Alcott, Director~~
Intergovernmental Affairs Policy Unit
Florida State Clearinghouse
Executive Office of the Governor
Office of Planning and Budgeting
The Capitol, Room 1603
Tallahassee, Florida 32399-0001

RECEIVED
FEB 14 1995
DISTRICT ENVIRONMENTAL
MANAGEMENT OFFICE

RECEIVED
FEB 1 6 1995
SVERDRUP CORPORATION
BARTOW, FLORIDA

Subject: **Advance Notification**
Work Program Item Number 1147948
State Project Number 16320-1402
Federal-Aid Project Number ACDH-4-1(130)25
Interstate 4 - From West of Memorial Boulevard to the Polk/Osceola County Line,
Polk County, Florida

Dear Ms. Alcott:

The attached Advance Notification Package and ten (10) copies are forwarded to your office for processing through appropriate State agencies in accordance with Executive Order 93-194. Distribution to local and Federal agencies is being made as noted.

Although more specific comments will be solicited during the permit coordination process, we request that permitting and permit reviewing agencies review the attached information and furnish us with whatever general comments they consider pertinent at this time.

This is a Federal-Aid action and the Florida Department of Transportation, in consultation with the Federal Highway Administration, will determine what degree of environmental documentation will be necessary. The determination will be based upon in-house environmental evaluations and comments received through coordination with other agencies. Please provide a consistency review for this project in accordance with the State's Coastal Zone Management Program.

In addition, please review this improvement's consistency, to the maximum extent feasible, with the approved Comprehensive Plan of the local governmental jurisdiction(s) pursuant to Chapter 163, Florida Statutes.

We are looking forward to receiving your comments on the project within 45 days. Should additional review time be required, a written request for an extension of time must be submitted to our office within the initial 45-day comment period.

Your comments should be addressed to:

Mr. C. O. Morgan, P.E.
District Environmental Management Engineer
Florida Department of Transportation
Post Office Box 1249
Bartow, Florida 33831-1249

Your expeditious handling of this notice will be appreciated.

Sincerely,

C. O. Morgan, P.E.
District Environmental
Management Engineer

Attachment

2/10/95
FAA interposes no objection from an aeronautical standpoint

C E Howard
FAA, Airports District Office, Orlando, FL

U.S. Department
of Transportation

Federal Aviation Administration

Official Business
Penalty for Private Use $300

FEDERAL AVIATION ADMINISTRATION
AIRPORTS DISTRICT OFFICE
9677 Tradeport Drive, Suite 130
Orlando, FL 32827-5397

U.S. OFFICIAL MAIL
PENALTY FOR PRIVATE USE $300
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U.S. POSTAGE

MR C O MORGAN
DISTRICT ENVIRONMENTAL MANAGEMENT ENGINEER
FLORDIA DEPARTMENT OF TRANSPORTATION
P.O. BOX 1249
BARTOW, FL 33831-1249

FAA Form 1360-6(6-89)

Department of
Environmental Protection

Lawton Chiles
Governor

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Virginia B. Wetherell
Secretary

February 6, 1995

Mr. C.O. Morgan, P.E.
District Environmental Management Engineer
Florida Department of Transportation
Post Office Box 1249
Bartow, Florida 33831-1249

Dear Mr. Morgan:

SUBJECT: **Advance Notification**
Work Program Item Number: 1147948
State Project Number: 16320-1402
Federal-Aid Project Number: ACDH-4-1(130)25
Interstate 4 - From West of Memorial Boulevard to the Polk/Osceola County Line,
Polk County, Florida

Thank you for your recent advance notification regarding the above captioned project. The Department of Environmental Protection, Submerged Lands & Environmental Resources Program requires consent in the form of an easement for public right of ways on sovereignty submerged lands pursuant to Chapter 18-21, F.A.C.

Upon receipt of the Joint DEP/ACOE application for this project, our Title and Lands Record Section will identify any activity occurring on state-owned lands. A Completeness Summary will be sent to you requesting any additional information required to complete your file.

If you have any questions, please feel free to contact me at the Central District Office, 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803 or call (407) 894-7555 X 2365.

Sincerely,

Susan E. Leitholf

Susan E. Leitholf, Planner II
Submerged Lands and Environmental
Resources Program

SVERDRUP COPIES/ROUTING		
C	INTL.	R
✓	RGM	
	CAJ	✓
KWD: 08, 20		
PROJ: 010		

SEL/bam

Department of
Environmental Protection

Lawton Chiles
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wetherell
Secretary

April 3, 1995

RECEIVED
APR 5 1995
Florida Coastal
Management Program

Ms. Suzanne Traub-Metlay
Florida State Clearinghouse
Executive Office of the Governor
Office of Planning & Budgeting
The Capitol
Tallahassee, Florida 32399-0001

RE: FDOT Advance Notification/Polk County Interstate 4 Expansion West of Memorial Boulevard
SAI: FL9502060070 WPI: 1147948

Dear Ms. Traub-Metlay:

The Department has reviewed the referenced document and we offer the following comments.

The existing facility is a four lane divided highway that extends from west of Memorial Boulevard to the Polk County line, a distance of approximately 30 miles. The roadway, with the exception of interchanges and four bifurcated areas in the locale of the Green Swamp, was built within the standard interstate right-of-way width of 300 feet. The future right-of-way width is proposed to be a minimum of 423.2 feet. As a result of the master plan prepared for I-4 in Polk County, the ultimate roadway would provide for six general purpose lanes, four special use lanes (high occupancy/single occupant through vehicles) and sufficient right-of-way for future inclusion of high speed rail service. Nine existing interchanges would be improved and two proposed interchanges with the Polk County Parkway would be added.

The project is one component of a larger I-4 expansion project across the mid-section of the state. This proposed segment of the I-4 expansion essentially goes through all of Polk County and affects several important ecosystems across three water management districts (SWFWMD, SJRWMD and SFWMD). Proceeding from west to east, the proposed expansion traverses the upper Peace River tributary known as Saddle Creek. Further east, the project traverses an area known as the eastern lobe of the Green Swamp. Finally, a small portion east of Highway U.S. 27 is in the Davenport Creek drainage of the upper Kissimmee River basin.

<u>Peace River/Saddle Creek Portion</u>

This area is under very active review and planning by state, regional and local government agencies for a number reasons. For

one, there is an effort to restore altered water flows, rehydrate wetlands within the system and establish some wildlife connections (which have been affected by I-4's original crossing of the area and the extensive phosphate mining in this area). Second, multiple DRI's and the planned Polk County Turnpike affect this portion of I-4; future development in the area will likely be extensive and natural system protection/restoration planning must occur presently. Finally, this segment of the I-4 project cuts across the developing north/south connection of the State's Greenway system and related Integrated Habitat Network which are being developed to link the Green Swamp, Peace River and Alafia River

Eastern Lobe of the Green Swamp

The other major natural system which this proposed expansion affects is the Green Swamp, a designated "Area of Critical State Concern". The existing corridor bisects several very large hardwood/cypress strands which represent the headwaters for the Withlacoochee and the Oklawaha (the tributary Palatlakaha) Rivers. This area is presented in the FGFWFC "Closing the Gaps In Florida's Wildlife Habitat Conservation System" as one with high habitat scores (between 6 and 10 listed species).

The proposed expansion of the I-4 corridor to over 400 feet wide (10 lanes of highway traffic and two rail lines) will impact numerous wetlands and further separate existing habitat on the south of I-4 from the north. Planning and design for the expansion of I-4 should aim to avoid and minimize wetland impacts, allow for improved north to south hydrologic connections and provide wildlife linkages.

I-4 Expansion & Interagency Efforts Toward Ecosystem Management

The Polk County I-4 expansion project has already been involved in a cooperative interagency/public coordination process since its early planning stages. The opportunity to design and develop this corridor following some of the basic precepts of ecosystem management has been pursued (e.g., acknowledgment of the connectedness and ecological integrity of systems [natural and man-made], while reconciling this with an expanding transportation corridor). At present the following issues are being addressed though many details are yet to be resolved:

Riparian/Wildlife Crossings

The expansion of I-4 is expected to result in a reasonably impassable barrier for certain wildlife species. To counter this effect three riparian/wildlife friendly crossings are being considered.

1. A possible location for the development of a crossing in the Saddle Creek portion (at Township 27S, Range 24E, Section 12) is presently being examined.

Possible acquisition of properties in these locations as a part of project mitigation should be considered as they would support a physical connection to the Green Swamp from the Saddle Creek area and support the long-term management of a riparian/wildlife corridor. In addition, such acquisitions would help to reconnect some portions of the historic Saddle Creek Basin to the north of I-4 with the existing basin to the south. The desired outcome is an increase in water flow to support wetland restoration at various location in the Saddle Creek Basin and over time, re-establishment of some wildlife connections.

The riparian/wildlife connection to the south of I-4 would follow through the south end of section 12 and then to either section 13 or 14 (yet to be determined), then on to the Tenneroc State Reserve and south to existing Saddle Creek and eventually to the Peace River.

2. Green Swamp/SWFWMD, east of Highway 557: A possible location of the riparian/wildlife crossing has been discussed as southeast Section 29 (T26S, R26E) which follows a major hardwood/cypress strand and headwaters of the Withlacoochee River. Another possible location is in the northeast of Section 28 (T26S, R26E) where FDOT has identified deep muck pockets where bridging may be desirable.

3. Green Swamp/SJRWMD, east of Highway 557: A possible location of the riparian/wildlife crossing is the N.E. quadrant of Section 23 (T26S, R26E). Another possible location is in the central part of Section 23 (T26S, R26E) where FDOT has identified deep muck pockets where bridging may be desirable.

The placement of riparian/wildlife crossings at these locations would be beneficial due to the adjacency of both the wetlands and more upland areas. Use of mitigation monetary set-a-sides for acquisitions of land both north and south of the riparian crossings, which would support the placement of the crossings, should be considered.

An alternative or concurrent scenario is that mitigation moneys could be placed into a fund to support wetland and upland restoration projects in the Lake Louisa State Park and adjacent P-2000 lands. This area has become a focal point of acquisition in the Green Swamp and consists of relatively healthy wetlands matrixed within rather disturbed uplands (primarily old citrus groves and pasture on the sandy ridges of upland areas). The SJRWMD, the DEP District 3, Florida Parks Service and the FGFWFC would provide a

cooperative effort to manage these restoration actions.

An additional option may present itself in the form of a private mitigation bank that is being proposed for an area adjacent to Lake Louisa State Park. Presently, the area consists of approximately 1000 acres and is known as the Lake Louisa & Green Swamp Regional Mitigation Bank. Permitting for these banks is possibly forthcoming.

FNAI Element Occurrences

The Florida Natural Areas Inventory (FNAI) reviewed the proposed project with respect to known occurrences of threatened/endangered plants, animals and natural communities in the FNAI data base. The FNAI data base represents a compilation of information extracted from published and unpublished literature, museums and herbaria, field surveys, personal communications, and other surveys and should never be regarded as final statements on the elements or locations in question. At present, the following are known to be within a .5 mile corridor of the proposed segment of the I-4 project:

Scientific Name	Common Name	Federal Status	State Status
Vertebrates:			
Neofiber alleni	(round-tailed muskrat)	C2	N
Eumeces egregius egregius	(FL Keys mole skink)	C2	LS
Sciurus niger avicennia	(mangrove fox squirrel)	C2	LT
Haliaeetus leucocephalus	(bald eagle)	LE	LT
Casmerodius albus	(great egret)	N	N
Egretta thula	(snowy egret)	N	LS
Egretta caerulea	(little blue heron)	N	LS
Egretta tricolor	(tricolored heron)	N	LS
Nycticorax nycticorax	(black-crowned night-heron)	N	N
Eudocimus albus	(white ibis)	N	N
Plegadis falcinellus	(glossy ibis)	N	N
Plants:			
Peltandra sagittifolia	(spoon flower)	N	N
Others:			
Bird Rookery	~1.2 mile south of T27S, R25E section 18		

Summary

Due to the complexity of this transportation corridor expansion project, the impacts and opportunities it presents for various natural systems, and the fact that it crosses between three separate water management districts and an area of critical state concern, the DEP has (and would like to continue) coordinating the interagency discussions and consensus building.

The expansion of the highway will result in a permanent, wide, heavily used transportation corridor across the landscape of Central Florida. Integration of natural system protection and enhancement must be an important part of this project due to the fact that it will be a long time before we have the opportunity to re-address this area and due to the increased development this highway expansion will support.

For further discussion regarding the Department's involvement with the proposed I-4 expansion project, the FDOT may contact Dan Pennington, Office of Intergovernmental Programs, at (904) 487-2231.

Sincerely,

Carliane D. Johnson
Environmental Specialist
Office of Intergovernmental Programs

CDJ/dp
cc: George Craciun
Barbara Lenczewski
Dan Pennington
Frank Votra

FLORIDA GAME AND FRESH WATER FISH COMMISSION

MARLIN HILLIARD, Clewiston | J. BEN ROWE, Gainesville | JULIE K. MORRIS, Sarasota | QUINTON L. HEDGEPETH, DDS, Miami | MRS. GILBERT W. HUMPHREY, Miccosukee

ALLAN L. EGBERT, Ph.D., Executive Director
WILLIAM C. SUMNER, Assistant Executive Director

FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, FL 32399-1600
(904) 488-1960
TDD (904) 488-9542

March 6, 1995

Ms. Janice L. Hatter, Director
Florida State Clearinghouse
Executive Office of the Governor
Office of Planning and Budgeting
The Capitol
Tallahassee, Florida 32399-0001

Re: SAI #9502060070, Polk County, Interstate 4 (West of Memorial Boulevard)

Dear Ms. Hatter:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission (GFC) has reviewed the referenced document, and offers the following comments.

The Florida Department of Transportation proposes to widen Interstate 4 (I-4) from a right-of-way width of 300 feet to a minimum of 433.2 feet in order to accommodate a total of six general-purpose lanes, four special-use lanes, and, possibly, a high-speed railroad. Wetland impacts are projected to total 248.5 acres; however, no mitigation plan has yet been proposed.

Most of the road corridor passes through rural agricultural and low-density residential land uses that include native wetland and upland systems, as well as mined lands that have been reclaimed to uplands and wetlands. Outstanding habitat features along this route are the strands of cypress and bottomland hardwood wetlands bisected by I-4 between County Road 557 and U.S. 27. The narrative accompanying the SAI characterizes I-4 in this area as creating "a major constriction in the surface hydrology because of...relatively few hydrologic connections between the north and south sides of the road." Although few, if any, site-specific data exist on the wildlife uses of these wetlands, the fragmentation of these wetland habitats by I-4 poses a potential constriction in the wetland habitats used by a wide variety of wildlife species that have been documented in a private, six-month monitoring program as being killed on I-4. Many of these species are wetland dependent, and include the eastern indigo snake (threatened), American alligator (species of special concern), and some relatively wide-ranging mammals, such as the river otter, round-tailed muskrat, Florida weasel, and an unidentified species of fox. In addition, habitat analyses performed by our Nongame Wildlife Program indicate that this area is rated as very high (seven

or more focal species) in terms of a Biodiversity Hot Spot, contains considerable habitat designated as a Strategic Habitat Conservation Area, and has a very high (40 to 50 species) Species Richness Index.

Also of note is the western portion of the I-4 corridor that passes north of Tenoroc Fish Management Area in the Saddle Creek area, east of Lakeland. Although currently rural, this area is targeted for massive development in the near future, with as many as three Developments of Regional Impact proposed or soon to be proposed, all of which are essentially contiguous and all of which are adjacent to I-4. There are two potential restoration issues in this area. First, this area has been targeted as a Greenway in the December 15, 1994, draft report of the Florida Greenways Commission to the Governor. Second, we have recently learned that an old mining pit north of I-4 and west of State Road 33 is diverting water that may have historically drained south to Saddle Creek and, ultimately, to the Peace River, a system that is currently receiving considerable scrutiny by Southwest Florida Water Management District in terms of its water budget. Although an underpass in this area would probably not receive extensive use by wildlife species that are sensitive to human disturbance, our efforts to restore lands mined for phosphate have recognized the potential value of linking native lands providing habitat even for common terrestrial wildlife species to mined lands with reestablishing populations of terrestrial species. We believe that restoration efforts may be enhanced by a link to the Green Swamp north of I-4; therefore, if waters diverted by the mining pit were redirected toward Tenoroc Fish Management Area, the number of species potentially accommodated by inclusion of an aquatic and wetland link may augment such a connection.

This project will impact the programs of at least five state or regional agencies and two local governments. First, the Florida Department of Community Affairs (DCA) has designated it as the Green Swamp Area of Critical State Concern. Second, the Florida Department of Environmental Protection (FDEP) will be involved through its roles as the lead agency for ecosystem management and for Greenways, as well as through its phosphate reclamation program. The FDEP may also have an interest through the Conservation and Recreation Lands program via the proposed acquisition of the Green Valley (a.k.a. ScanAmerica) property, which lies on both sides of I-4 east of County Road 557. Third, both the Southwest and St. Johns River water management districts have lead regulatory roles for wetland impact and surface water permits. Fourth, the GFC has an active interest in maintaining wildlife populations, not just for listed species, but also for more common species, throughout the state. Finally, Polk County and the City of Lakeland are responsible for planning local future land use patterns.

Because of the complexity of agency and local government interests in this area and the opportunity to coordinate these interests, we recommend that the affected agencies and local governments meet to formulate a policy regarding wetland mitigation locations and the feasibility of underpasses to present to the Water Resources Coordinating Council, and request that the Council members give their regulatory staff direction to pursue an integrated

approach to these issues. Because much of the interest in the Polk County portion of the I-4 improvements is centered on the designation of this area as the Green Swamp Area of Critical State Concern, we further recommend that the DCA be the lead agency for this policy-setting effort.

Sincerely,

Bradley J. Hartman, Director
Office of Environmental Services

BJH/MAP/rs
ENV 1-3-2
ENV 1-13-2
i4.sai
cc: Ms. Cheryl A. Jones, P.E.
Sverdrup Civil, Inc.
P.O. Box 1636
Bartow, Florida 33831

Mr. C.O. Morgan, P.E., FDOT, Bartow

Mr. John DeWinkler, FDOT, Bartow

Mr. Mark Schulz, FDOT, Bartow

Mr. Michael McDaniel, DCA, Tallahassee

Ms. Rebecca Jetton, DCA, Bartow

Mr. Dan Pennington, FDEP, Tallahassee

Mr. Clark Hull, SWFWMD, Bartow

Mr. Lance Hart, SJRWMD, Orlando

FLORIDA DEPARTMENT OF STATE
Sandra B. Mortham
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250
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Florida Coastal Management Program

March 6, 1995

Ms. Janice L. Hatter, Director
State Clearinghouse
Executive Office of the Governor
Room 1603, The Capitol
Tallahassee, Florida 32399-0001

In Reply Refer To:
Robin D. Jackson
Historic Sites Specialist
(904) 487-2333
Project File No. 950664

RE: SAI# FL9502060070
Florida Department of Transportation
Advance Notification
Interstate 4 - From West of Memorial Boulevard to the Polk/Osceola County Line
SPN: 16320-1402
WPN: 1147948
Polk County, Florida

Dear Ms. Hatter:

In accordance with the provisions of Florida's Coastal Zone Management Act and Chapter 267, Florida Statutes, as well as the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project(s) for possible impact to historic properties listed, or eligible for listing, in the National Register of Historic Places, or otherwise of historic or architectural value.

We have reviewed the Advanced Notification for the Florida Department of Transportation (FDOT) project referenced above. We note that the project will have a cultural resource survey performed. Therefore, conditioned upon the FDOT undertaking a cultural resource survey, and appropriately avoiding, minimizing, or mitigating project impacts to any identified significant archaeological or historic sites, the proposed project will have no effect on historic properties listed, or eligible for listing, in the National Register, or otherwise of historical or architectural value. If these conditions are met the project will also be consistent with the historic preservation aspects of Florida's Coastal Management Program.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Jrj
xc: Jasmine Raffington, FCMP-DCA

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

2740 CENTERVIEW DRIVE • TALLAHASSEE, FLORIDA 32399-2100

LAWTON CHILES
Governor

LINDA LOOMIS SHELLEY
Secretary

May 22, 1995

Mr. C. O. Morgan, P.E.
District Environmental Management Engineer
Florida Department of Transportation
Post Office Box 1249
Bartow, Florida 33830-1249

RE: Florida Department of Transportation - Advance Notification - Polk County Interstate 4 Expansion - From West of Memorial Boulevard to the Polk/Osceola County Line - WPI: 1147948
SAI: FL9502060070

Dear Mr. Morgan:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Governor's Executive Order 93-194, section 216.212, Florida Statutes, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the Advance Notification for the Polk County Interstate 4 (I-4) Expansion West of Memorial Boulevard.

The proposed 30-mile corridor extends through all of Polk County, affecting several important ecosystems across three water management districts, including the Green Swamp Area of Critical State Concern; the Peace River tributary, Saddle Creek; and the Davenport Creek drainage of the upper Kissimmee River basin. Therefore, several of the reviewing agencies have recommended intergovernmental coordination to develop an ecosystem management policy, wetland mitigation, and wildlife protection measures which should be included in future environmental documents prepared for this project. In addition, the reviewing agencies have identified several issues, as enclosed and summarized below.

The Florida Game and Fresh Water Fish Commission (GFWFC) indicates that the project may impact environmentally sensitive areas, including areas rated very high as a biodiversity hot spot (contains seven or more focal species); considerable area within a designated Strategic Habitat Conservation Area, and areas with a high Species Richness Index (40 to 50 species). The Department of Transportation (DOT) is advised to consider a project design which would improve surface and

groundwater hydrology and create wildlife underpasses. The GFWFC also recommends coordination of project planning with the affected state, regional and local agencies. Please refer to the enclosed GFWFC letter of March 6, 1995.

The Department of Environmental Protection (DEP) indicates that the project will impact several important ecosystems including Saddle Creek, a tributary to the Peace River; a portion of the Green Swamp; and the Davenport Creek drainage area of the Kissimmee River basin. A review of the Florida Natural Areas Inventory indicates that several species listed as threatened, endangered, or species of special concern occur within a half-mile corridor adjacent to the proposed roadway. The development of riparian/wildlife crossings at specific locations adjacent to both wetland and upland areas is recommended in order to avoid creating an impassable barrier for wildlife. Please refer to the enclosed DEP letter for further discussion of these issues.

The Southwest Florida Water Management District (SWFWMD) and the St. Johns River Water Management District (SJRWMD) have expressed concerns regarding the project's potential impacts upon the Green Swamp, wetland functions, water flow, water quality, and potential loss of area in the 10-year and 100-year flood plain. The SWFWMD also indicates that more specific information, including detailed location maps, an analysis of measures for avoiding and minimizing impacts, and possible alternative actions, is required in order to thoroughly evaluate the project's impacts. Please refer to the enclosed March 23, 1995 letter from the SWFWMD and the enclosed February 21, 1995 letter from the SJRWMD.

The South Florida Water Management District (SFWMD) indicates that the above-referenced project is not located within the district's jurisdictional boundaries. However, the SFWMD indicates that the DOT's proposal to widen and improve the entire I-4 corridor between Tampa and Daytona Beach does include areas within the SFWMD's boundaries. The existing roadway has resulted in interruption of historic water flows and fragmentation of wetland systems. The proposed improvements for the entire corridor will result in additional impacts to adjacent wetlands. Therefore, the SFWMD recommends avoiding a regional piecemeal approach and encourages the DOT to coordinate with the three affected water management districts to create an ecosystem approach to developing the mitigation plans. Please refer to the enclosed SFWMD comments.

The Department of State (DOS) indicates that the DOT is required to conduct a cultural resources survey to identify any significant archaeological and/or historic sites which may be located within the project area. The proposed project will have no effect on significant

archaeological and/or historic sites, if the DOT avoids or mitigates any impacts to sites identified in the survey. Please refer to the enclosed DOS comments.

The Department of Community Affairs (Department), pursuant to its role as the state's land planning agency, indicates that the project is not included in the current adopted Polk County Comprehensive Plan. The DOT is advised that the Polk County Comprehensive Plan should be updated to reflect the proposed project. Future environmental documents prepared for this project will be reviewed to determine the project's consistency with the Principles for Guiding Development in the Green Swamp Area of Critical State Concern pursuant to Chapter 380.0551, Florida Statutes, and Chapter 28-24, Florida Administrative Code. The Department also recommends interagency planning for the construction of wildlife crossings or underpasses at locations within and in close proximity to the Green Swamp. Please refer to the Department's enclosed comments.

Based on the information contained in the notification of intent and the enclosed comments provided by our reviewing agencies, the state has determined that the proposed action is consistent with the Florida Coastal Management Program (FCMP) at this advanced notification stage. All subsequent environmental documents must be reviewed to determine the project's continued consistency with the FCMP. These documents should provide thorough information regarding the location and extent of wetlands dredging and filling, borrow sources, dredging or filling associated with bridge construction and stormwater management. The state's continued concurrence with this project will be based, in part, on the adequate resolution of the issues identified during this and subsequent reviews. All future environmental documents prepared for this project must be submitted to the Florida State Clearinghouse for interagency review.

Very truly yours,

Mary Anne Price
for Linda Loomis Shelley
Secretary

LLS/rk
Enclosures
cc: Carliane Johnson, Department of Environmental Protection
Bradley Hartman, Game and Fresh Water Fish Commission
Mark Phelps, Southwest Florida Water Management District
Terrie Bates, South Florida Water Management District
Henry Dean, St. Johns River Water Management District
Estus Whitfield, Executive Office of the Governor

Southwest Florida Water Management District

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Florida Coastal Management Program

March 23, 1995

Ms. Suzanne Traub-Metlay
Executive Office of the Governor
Room 1603, The Capitol
Tallahassee, Florida 32399-0001

Subject: U.S. DOT, I-4 Improvement Study From Memorial Boulevard to the Polk/Osceola County Line
SAI#: FL9502060070

Dear Ms. Traub-Metlay:

The staff of the Southwest Florida Water Management District (District) has conducted a consistency evaluation for the project referenced above. Consistency findings are divided into four categories and are based solely on the information provided in the subject application.

FINDING	CATEGORY
	Consistent/No Comment
	Consistent/Comments Attached
	Inconsistent/Comments Attached
X	Consistency Cannot be Determined Without an Environmental Assessment Report/Comments Attached

This review does not constitute permit approval under Chapter 373, Florida Statutes, or any rules promulgated thereunder, nor does it stand in lieu of normal permitting procedures in accordance with Florida Statutes and District rules.

If you have any questions or if I can be of further assistance, please contact me in the District's Planning Department.

Sincerely,

Mark D. Phelps, AICP
Development Review Coordinator

MDP
cc: Ralph Cantral, DCA

DISTRICT STAFF COMMENTS
U.S. DOT, IMPROVEMENT STUDY
FROM MEMORIAL BOULEVARD TO THE POLK/OSCEOLA COUNTY LINE
March 23, 1995

The planning staff of the Southwest Florida Water Management District (District) appreciates the opportunity to comment on the Advance Notification item referenced above which proposes to add two additional lanes to interstate 4 from west of Memorial Boulevard to the Polk/Osceola County Line (approximately 30 miles), in Polk County Florida. The ultimate roadway would provide for six general purpose lanes, four high occupancy through lanes, and sufficient right-of-way for future high speed rail service.

The District is concerned over the project's potential impacts to the green swamp, to wetland systems, to water flow and water quality, and potential encroachments of the 100-year flood plain. The application does not provide enough information to determine consistency with District plans, programs and policies designed to implement its statutory mandates. As such, further environmental documentation is needed to address the concerns listed above including more detailed location maps, discussions of impact avoidance and impact minimization, and possible alternative actions.

South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (407) 686-8800 • FL WATS 1-800-432-2045

GOV 04-40

March 6, 1995

Mr. C.O. Morgan, P.E.
District Environmental Management Engineer
Florida Department of Transportation
P.O. Box 1249
Bartow, FL 33831-1249

Subject: Interstate 4 From Memorial Boulevard to the Polk/Osceola County Line Advance Notification [WPI #1147948]/[SAI #9502060070]

Dear Mr. Morgan:

In response to your request, South Florida Water Management District (SFWMD) staff has reviewed the Advance Notification Fact Sheet for the above-referenced project which is located in Florida Department of Transportation (FDOT) District 1.

After review of the information submitted, including the project location map, staff has determined that the proposed project is located outside of the jurisdictional boundaries of the SFWMD within the St. Johns River and Southwest Florida Water Management Districts. Although this particular segment of Interstate 4 (I-4) is not located within SFWMD jurisdictional boundaries, it is part of a larger FDOT proposal to widen and improve the entire I-4 corridor between Tampa and Daytona Beach. This corridor crosses the boundaries of three different FDOT districts and three different water management districts.

Due to the fragmentation of existing wetland systems and the interruption of historic surface water flows that has occurred as a result of the original I-4 construction (e.g., the Green Swamp, Reedy Creek, Shingle Creek) and the additional wetland impacts anticipated in connection with the improvements proposed along the entire I-4 corridor, the SFWMD recommends that the FDOT take an ecosystem approach to developing a mitigation plan for this project (coordinated with the three affected water management districts) rather than having piecemeal mitigation projects developed separately by the jurisdictional FDOT regional districts.

Should the FDOT initiate any discussions regarding the establishment of a regional mitigation plan for this project, SFWMD staff are willing to participate.

Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680

We appreciate this opportunity to comment and hope that the above recommendation is useful in your decision-making process. If I can be of further assistance, please contact me at (407) 687-6952.

Sincerely,

Terrie Bates

Terrie Bates, Director
Regulation Department

TB/jjg

c: C.L. Irwin, FDOT, Tallahassee
John DeWinkler, FDOT, Bartow
Terry Pride, DEP, Tallahassee
Jeff Elledge, SJRWMD
Rich McLean, SWFWMD
State Clearinghouse

ROGER MENENDEZ
PB QD

Orig to file
xc: DGS / JLS / SDF / Project Box
Jennifer Allison - PSE

WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director
Charles T. Myers III, Deputy Assistant Executive Director

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TDD 407/897-5960

7775 Baymeadows Way
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904/730-6270
TDD 904/730-7900

PERMITTING:
305 East Drive
Melbourne, Florida 32904
407/984-4940
TDD 407/722-5368

OPERATIONS:
2133 N. Wickham Road
Melbourne, Florida 32935-8109
407/254-1762
TDD 407/253-1203

March 16, 1995

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Mr. C. O. Morgan, P.E.
District Environmental Management Engineer
Florida Department of Transportation
Post Office Box 1249
Bartow, Florida 33831-1249

RE: Work Program Item Number 1147948; Interstate 4 - From West of Memorial Boulevard to Polk/Osceola County Line, Polk County, Florida.

Dear Mr. Morgan:

The St. Johns River Water Management District is pleased to review the portion of the proposed Interstate 4 Project within our District, Sections 13, 22, 23, 27, Township 26 East, as requested by the Florida Department of Transportation. Portions of the subject property appears to be located in floodplains and wetlands, based on staff's June 29 and July 1, 1994, pre-application site inspections of the wetlands within the proposed project area. The major issues of concern that the District has about the floodplain and wetlands consist of the following:

- loss of the 10 year and 100 year floodplain:
- loss of wetland functions,
- cumulative impacts to water quality and wetland functions; and,
- secondary impacts to water quality and wetland functions.

It was difficult to fully assess the permit requirements for the project from the description provided, however, the project appears to require a Management and Storage of Surface Water (MSSW) Permit (Chapter 40C-4, Florida Administrative Code [F.A.C.]). Also, a Wetland Resource Management Permit (section 62-312, F.A.C.) may be required for the proposed road improvements.

The District is available to meet with the Florida Department of Transportation to identify fully the permitting requirements specific to this project, or for a joint meeting with other regulatory agencies that will be involved. If you have any questions, please contact Elizabeth Skene, the Orlando Field Office Director at (407) 897-4302, or me at (904) 329-4262.

Kindest personal regards.

Sincerely,

FOR Henry Dean,
Executive Director

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C	INTL.	R
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✓	JPT	
	CAJ	✓
✓	TJM	

KWD: 08, 20
PROJ: 010

cc: Jeff Elledge
Glenn Lowe
Elizabeth Skene

HD/ES/hh

Clearinghouse 95-0070

February 21, 1995

Mr. C.O. Morgan, P.E.
District Environmental Management Engineer
Florida Department of Transportation
Post Office Box 1249
Bartow, FL 33831-1249

RE: Work Program Item Number 114[illegible] [illegible] East of Memorial Boulevard to the Polk/Osceola County Line, Polk County, Florida

Dear Mr. Morgan:

The St. Johns River Water Management District is pleased to review the portion of the proposed Interstate 4 Project within are District, Sections 13, 22, 23, 27, Township 26 South, Range 26 East, as requested by the Florida Department of Transportation. Portions of the subject property appears to be located in floodplains and wetlands, based on staff's June 29 and July 1, 1994, pre-application site inspections of the wetlands within proposed project area. The major issues of concern that the District has about the floodplain and wetlands consist of the following:

* loss of the 10-year and 100-year floodplain;
* loss of wetland functions;
* cumulative impacts to water quality and wetland functions; and
* secondary impacts to water quality and wetland functions.

It was difficult to fully assess the permit requirements for the project from the description provided, however, the project appears to require a Management and Storage of Surface Water (MSSW) Permit (Chapter 40C-4, Florida Administrative Code [F.A.C.]). Also, a Wetland Resource Management Permit (section 62-312, F.A.C.) may be required for the proposed road improvements.

The District is available to meet with the Florida Department of Transportation to identify fully the permitting requirements peculiar to this project. If you have any questions, please contact me at (904) 329-4262.

Sincerely,

Henry Dean
Executive Director

cc: Jeff Elledge
Glenn Lowe
Elizabeth Skene

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To Rosalyn	From Amy Cooper
Co. FL Coastal Mgt Prog	Co. SJRWMD
Dept.	Phone #
Fax # 904-487-2899	Fax #

David Dewey
Joan B. Budzynski
FDS/PA

Parsons Brinckerhoff

Memorandum

to	Distribution	**from**	Hesam Mirani H. M.
subject	Interstate 4 Project from West of Memorial Blvd. to West of U.S. 98 **SPN : 16320-1445** **WPI No.: 1147955**	**date**	June 21, 1994

A pre-design coordination meeting was held at the Bartow office of the Southwest Florida Water Management District (SWFWMD) at 10:00 A.M. on June 16, 1994. The purpose of the meeting was to discuss the SWFWMD requirements as they apply to the widening of the I-4 in Polk County.

In attendance at the meeting were:

Bill Hartman - SWFWMD
David Bishof - SWFWMD
James Lee - FDOT
Abe Neemeh - PBQD
Jose Ramos - PBQD
David Reutter - PBQD
Hesam Mirani - PBQD

The following is a list of the points which were made during the meeting as we understand them. If your understanding is different, please notify Hesam Mirani at (813) 874-5300 within a week.

1 OVERVIEW OF THE PROJECT

Abe Neemeh and Hesam Mirani presented an overview of the work being proposed on I-4. The project involves widening of a section of I-4 from the west of Memorial Boulevard to the west of US 98 in Polk County. The road will be widened from its existing 4-lane rural section to a 6-lane interim rural which is set to accept an ultimate 10-lane rural section. The project length is approximately 6 kilometers (3.74 miles).

2 SWFWMD ROLE

Bill Hartman stated that the SWFWMD will review the water quality, water quantity and the dredge and fill portion of the project.

3 PERMIT TYPES & FEES

Bill Hartman indicated that for such public projects, a general surface-water construction permit will be required with a fee of $1,600.

4 WATER QUALITY ISSUES

4a. Treatment Volume for Wet and Dry Ponds

The required treatment volumes for the dry and wet detention ponds are the first 1/2" and the first 1" of the entire directly connected impervious area, respectively. The conveyance ditch areas are not to be included in the total directly connected impervious area.

It was agreed that minor tapers at the connections between the local roads and the I-4 ramps could be exempted from water quality treatment. Hesam Mirani stated that water quality treatment for the segments of the road adjacent to existing wetlands would result in wetland encroachment. It was agreed upon that the wetland disturbance would be more detrimental to the water quality than discharging stormwater runoff directly into the wetlands. For these areas, the SWFWMD staff should be contacted. The agency will consider the water quality treatment on a case by case basis.

4b. SHWT Determination

The seasonal high water table (SHWT) elevations may be determined by a certified geotechnical firm. The SWFWMD accepts the determined SHWT elevations if they are generally in agreement with the SCS estimates of the SHWT shown in the SCS Soil Survey of Polk County. If the elevations differ drastically, the SWFWMD staff should be contacted to arrange a site inspection by the SCS staff to verify the findings of the geotechnical tests.

Hesam Mirani stated that based on the SCS estimates of the SHWT, it is difficult and cost prohibitive to locate any hydraulically suitable pond sites in the vicinity of I-4 for some portions of this project. In order to convey the runoff into the ponds at these locations, the SHWT must be lowered at these sites. Most of these sites are located beside existing ditches with positive outfalls. The standing water elevation in the ditches is significantly lower than the SCS estimates of SHWT at the proposed pond sites.

Hesam Mirani provided the district staff with a sample drawdown analysis. The analysis showed that the zone of influence resulting from a head difference of 3.3 feet is approximately 35 feet. For a typical pond, the distance between the right-of-way line and the location in the pond at SHWT elevation is usually more than 35 feet. Therefore, the drawdown area will be confined within the project boundary.

In addition, most of these ponds are located at the high side of their basins and are confined by the compacted base of the road. These factors will significantly minimize the amount of groundwater seepage into the ponds. The amount of seepage into these ponds will be accounted for in the orifice design.

Bill Hartman stated that lowering the SHWT in a wet detention pond is acceptable, as long as the issues of zone of influence and ground water seepage are addressed adequately in the design.

4c. Type of Infiltration Testing

The double ring infiltrometer (DRI) is the preferred method of testing for determination of the percolation rate in the dry ponds.

4d. Skimmers

Skimmers are required on all ponds (wet and dry).

4e. Orifice Design Criteria

The orifice for the wet detention ponds will be sized to release half of the treatment volume after 60 hours and the entire treatment volume after 120 hours. In addition, the orifice design should include the volume resulting from the ground water seepage when applicable.

4f. Outstanding Florida Water (OFW)

None of the receiving water bodies along I-4 are considered to be Outstanding Florida Waters (OFW).

4g. Littoral Zone

A littoral shelf is required for all wet detention ponds.

4h. Permanent Pool Criteria

The design of a permanent pool for a wet detention pond is optional.

4i. Credit for the Existing Impervious Areas

For an on-line treatment system, no credit will be given for the existing roadway pavement. For an off-line treatment system, only the new impervious area of the road requires treatment. When an area cannot be treated, compensatory measures should be considered.

5 WATER QUANTITY ISSUES

5a. Storm Frequency for Pond Design

The post-development discharge rate from the project area should not exceed the pre-development rate for a 24-hour/25-year storm event.

5b. Tailwater Criteria

For ponds which discharge into wetlands, the seasonal high water elevation of the wetland can be used as the tailwater elevation. The crown elevations of the roadway cross-drain pipes downstream of the project can also be used to estimate the tailwater elevation for the detention ponds.

5c. Shape Factor for the SCS Method

The SCS method is acceptable for the hydrologic analysis. A shape factor of 256 should be used for the unit hydrograph.

6 METRIC UNITS

All plans are prepared in metric system (International System). All drainage computations will still be in English System. The end results will be converted to metric units.

7 100-YEAR FLOODPLAIN ENCROACHMENT

The FEMA map should be used for determination of the 100-year floodplain encroachment. According to the FEMA map, a portion of this project will encroach into the 100-year floodplain. Therefore, this project is required to provide compensation for the floodplain encroachment.

8 WETLAND ENCROACHMENT AND MITIGATION

There are several wetlands present along I-4. Therefore, this project will encroach into some of the wetlands. David Reutter will arrange a field visit with David Bishof to determine the wetland boundaries within the project area.

9 EROSION CONTROL

Erosion control may be addressed in the plans by inserting the standard FDOT sheets and showing exact locations of all haybales, barriers, and fences by using tables.

10 RULE CHANGES

Bill Hartman stated that there are major revisions being made to both wetland and water quality rules. The changes to the wetland rules were supposed to take place after July of 1994. However because of several legal issues, the implementation of the rule has been delayed. It is anticipated that the implementation of changes to water quality rules will immediately follow the new environmental rules. David Bishof stated that the new environmental rules do not differ significantly from the existing rules.

It appears that all water management districts will adopt the St. Johns River Water Management District (SJRWMD) criteria for the water quality treatment. The SJRWMD rules are significantly more restrictive than the SWFWMD and their adoption may result in bigger detention facilities. Bill Hartman stated that the only way that the Department can lock into the existing rules is if they apply for a conceptual permit as soon as possible.

Hesam Mirani stated that PBQD will discuss this issue with the FDOT District Drainage Engineer as soon as possible.

11 FUTURE CONTACT

Any future inquiry from the SWFWMD should be coordinated through Bill Hartman.

The meeting was adjourned at 11:30 P.M.

cc: Ray Porter, FDOT
Tim Polk, FDOT
Attendees
File

PRE-APPLICATION CONFERENCE
WITH THE SWFWMD STAFF

Time and Date:	10.00 A.M., June 16, 1994
Project Name:	I-4 Improvement Project
Project Location:	Section of the I-4 from west of Memorial Boulevard to west of US 98 in Polk County
Project Length:	Approximately 6 kilometers (3.74 miles)
Project Scope:	Widening of I-4 from its existing 4-lane rural section to a 6-lane interim rural which is set to accept to an ultimate 10-lane rural section

MEETING AGENDA

1. Overview of the project
2. Role of the agency (water quality, water quantity, dredge and fill)
3. Type of permit and fee required
4. Water quality issue:
   - a. Treatment volume for wet and dry ponds
   - b. SHWT determination
   - c. Type of infiltration testing
   - d. Skimmers (for dry ponds?)
   - e. Orifice design criteria
   - f. Outstanding Florida Water (OFW)?
   - g. Littoral zone
   - h. Permanent pool criteria
   - i. Credit for the existing impervious areas
5. Water quantity issue:
   - a. Storm event for pond design
   - b. Tailwater criteria
   - c. Shape Factor for the SCS method
6. Metric Units
7. 100-year flood plain encroachment and compensation requirement
8. Wetland encroachment and mitigation requirements
9. Erosion control methods
10. Is SWFWMD presently considering any changes to the permitting rules?
11. Name of the contact for future coordination
12. Other issues
13. Adjournment

Baker

Meeting Minutes

I-4 Master Plan

Florida Department of Transportation
District One

State Project No. 16320-1402
Work Program Item No. 1147948
Federal-Aid Project No. ACDH-4-1(130)25

The following persons met at 10:00 A.M. in the PBSJ conference room in Bartow, FL to discuss the **Environmental Analysis** to be performed for the above referenced project.

Attendees

Florida Department of Transportation (FDOT)
Nancy Bright
Kevin Doyle
Ann Venables

Michael Baker, Jr., Inc.
T.J. Martin
Jeff Sawyer

Parsons, Brinckerhoff, Quade & Douglas, Inc. (PBQD)
Jim Moreno
Roger Menendez

Discussion:

* Environmental Work Plan
  An Environmental Work Plan was presented for review and comment:
  - Environmental Analysis should be both proactive and reactive.
  - Environmental analysis should be documented by study segment.
  - Include matrices by study segment.
  - Matrices should not quantify impacts, but should flag or rank environmental involvements.
  - Four general environmental categories should be evaluated and discussed for each study segment (social, cultural, natural and physical). Sub categories of environmental involvement will be discussed as appropriate.
  - Environmental concerns should be "Flagged" rather than using the term "Fatal Flaw".
  - The narrative should be grossly specific to the project corridor.
  - Baker will revise the Work Plan and submit to Ann Venables for review.

Note: The revised Environmental Work Plan is attached to these meeting minutes.

* Other Discussion Items:
  - A DOA will not be prepared for the Wedgewood Golf and Country Club. DOAs will be prepared for the Green Swamp and the Watson School.

- Air Quality - TSI to coordinate with FDOT Districts 5 and 7 and discuss with FDOT Central Office.
- Wildlife crossings are to be considered in the vicinity of the Green Swamp and at SR 33. (Coordinate with Greenway)
- Proceed with PD&E effort on Green Swamp issues. (wildlife, cultural resources, surface and ground water, flood plains, hydrology, water quality, recharge) Agency coordination should take place early and often.
- Sunshine Pipeline is proposing an I-4 crossing near Lake Hancock. (N. Bright has information and will provide to Baker)
- PBQD is to prepare an outline or Table of Contents for the Environmental Element of the Master Plan Report. The outline should identify the parties responsible for the categories listed in the outline.
- The level of environmental effort proposed for the Master Plan is/may be greater than the work effort negotiated. Baker and PBQD should look into preparing a request for a supplemental agreement. The environmental "threshold" should be defined. Examine the negotiated man hours against the revised environmental level of effort.

Action Items:

* Baker to revise Environmental Work Plan per above discussion.
* PBQD to prepare outline (Table of Contents) for Master Plan Report Environmental Element.
* FDOT (N. Bright) to provide Sunshine Pipeline information to Baker.
* Baker/PBQD to review negotiated man hours for environmental wok effort on the Master Plan.

MICHAEL BAKER., JR., INC.

Prepared by: Jeffrey L Sawyer

Date: November 18, 1993

Attachment

File: S.O. No. 20741-15-HFH

Interstate 4 Master Plan

Polk County, Florida

State Project No. 16320-1402
Work Program Item No. 11147948
Federal-Aid Project No. ACDH-4-1(130)25

Environmental Work Plan

The I-4 Master Plan will consider appropriate environmental concerns for specific areas of land use in the development of alternatives. This consideration will be in the form of identifying existing environmental characteristics which may cause an alternative to be unsuitable from an environmental perspective. Environmental analysis during the Master Plan development should be both proactive and reactive. Proactive environmental analysis will examine existing environmental characteristics within the Master Plan "footprint", generally the existing I-4 right-of-way and an area approximately 38 meters (125 ft) wide adjacent to both sides of the existing right-of-way. Reactive analysis will examine additional land use areas identified for potential use in the Master Plan alternatives.

Phase I. Identify Areas of Environmental Concern

Identify and locate areas of environmental concern within the "footprint" of the proposed right-of-way. (e.g. bifurcated median, interchange infield areas, existing right-of-way fringe, additional mainline right-of-way, rail station, interchange modifications) This phase will utilize information from the previous master plan and additional environmental data generated as the current master plan is developed. This phase of analysis will compile an inventory of existing environmental characteristics and result in the identification of areas of special environmental concern.

It is anticipated that the following environmental categories (as appropriate) will be evaluated for the Master Plan "foot print" and other specifically designated areas as they are identified in the alternative selection process:

A. Social

1. Land Use
2. Relocation Potential
3. Utilities and Railroads

B. Cultural

1. Section 4(f) Resources
2. Archaeologic/Historic
3. Recreation Areas

C. Natural Environment

1. Wetlands
2. Water Quality
3. Outstanding Florida Waters
4. Flood Plains
6. Wildlife and Habitat
7. Farmlands

D. Physical

1. Noise
2. Air
3. Construction
4. Contamination

Phase II. Identify Potential Significant Involvement ("Yellow Flags")

The areas of special environmental concern identified in Phase I will be further evaluated to identify potential **significant environmental involvements** using:

A. Additional field investigation
B. Document/literature search
C. Agency/organization coordination

Phase III. Identify Special Alignment Considerations ("Red Flags")

Areas with potential significant environmental involvements will be further evaluated to identify potential special alignment considerations. "Red Flags" are those areas which may require that an avoidance and minimization strategy be developed during the PD&E phase to establish an environmentally sensitive alignment for the proposed improvements.

Phase IV. Prepare Environmental Evaluation Working Paper

The working paper will document existing environmental characteristics of the project corridor by identifying the areas of special environmental concern, potential significant involvements ("Yellow Flags") and areas which will require special alignment considerations ("Red Flags"). This paper will be updated throughout the Master Plan development and used to compile the environmental element in the final Master Plan Report.

Phase V. Prepare Master Plan Report Environmental Element

The Master Plan Report environmental element will be prepared in accordance with the Stage III, March 9, 1993 Scope of Services.

An outline (Table of Contents) of the environmental element will be prepared early in the environmental evaluation process (during Phase I). The outline will contain the categories to be addressed in the discussion of environmental involvement and the party responsible for the data collection, data analysis and narrative preparation. This outline will be submitted to the environmental project manager (Ann Venables) for review and approval.

The narrative will discuss the environmental analysis of the I-4 corridor by study segment and will include evaluation matrices by study segment. The narrative will be grossly specific to the project corridor, that is, will not attempt to quantify impacts in detail. The matrices will rank the significant involvements by flag or designations such as low-medium-high, as appropriate.

Note: Other than the specific land use areas such as rail stations and interchange modifications, the Master Plan does not attempt to determine the alignment for the proposed improvements to I-4. As such, a detailed examination of environmental impacts other than those necessary for "Red Flag" determination is not required at the master plan phase of this study of the I-4 corridor. The environmental element of the master plan will serve to identify areas of environmental concern and special alignment considerations which will be evaluated in detail during the following PD&E phase of this study.

Orig: I4 MP Project File
cc: JL Sawyer / MA Osipov / SD Flaherty / Project Book - Public Involvement
MD Macy / LR Ankney / TJ Martin
J. Moreno - PBQD
R. Alberts - TSI

Greiner

C2855.00
August 2, 1994

MEMORANDUM

TO: File

FROM: Ken Muzyk KLM

SUBJECT: Coordination Meeting with City of Lakeland

The meeting was held on July 27, 1994, at 1:30 p.m. at the City of Lakeland City Hall with a list of attendees and handouts attached.

The meeting started with an introduction by everyone. The items discussed are as follows:

1. Carpenters Way Road

Greiner presented two options for the Carpenters Way Road overpass at Interstate 4.

The first option was to construct the new roadway west of the existing crossing through the wetlands; the second option is to construct the new roadway at the location of the existing roadway.

The roadway planned between the Wedgewood Golf Course and Socrum Loop Road will be constructed by the City of Lakeland within the next 21 months. The continuation of this roadway connecting to US 98 is in a planning stage. The FDOT had inquired if the Carpenters Way Road connection was necessary if the planned road would be constructed. The City indicated they would like for both the existing Carpenters Way Road and the planned road to remain.

The planned road is not in the current MPO Plan, but may be included in future updates of the MPO Plan. The City indicated they had made preliminary contact with the landowners adjacent to the planned road.

Greiner indicated that replacement of the existing roadway in place would require closing the road for 9-12 months. The City also indicated the ownership of Carpenters Way Road was unclear and that the right-of-way only exists within the limits of the prior construction in the 1950's. The City would not object to relocating the historical arch, but that local residents would likely object.

Based on these items it was indicated by John DeWinkler that Greiner should proceed based on the new alignment of Carpenters Way Road going through the wetland to the west of the existing alignment.

2. CR 582/I-4 Interchange

The FDOT requested the City to classify which businesses were most important to the City to avoid when locating the CR 582 Interchange. In the order of least sensitive, the list is as follows:

(1) Holiday Inn
(2) Paddock Club Apartments
(3) Cracker Barrel

All interchange alternates included locating the eastbound ramps at the location indicated in the Master Plan. Alternates 3 through 6 assume Interstate 4 will be an urban section.

Greiner presented six alternate layouts for the CR 582 interchange. Alternates 1 and 2 were configurations that resulted in significant impacts and required relocating SR 33. These layouts were prepared by Michael Baker, Inc.

based on MP Typical (424 R/W)

Alternate 3, the diamond interchange on the north, was acceptable to the City. The City requested that Greiner modify this alternate to include a full diamond interchange by constructing a new roadway between CR 582 and SR 33 to serve the interchange only. The existing overpass at CR 584 and I-4 would remain. Greiner indicated they would review this interchange alternate.

Alternate 4 consisted of relocating the westbound Master Plan ramps to the east between the Holiday Inn and the Paddock Club. This interchange was not desired by the City.

Alternate No. 5 which consisted of the Master Plan configuration over the Holiday Inn was acceptable.

Alternate No. 6 which had the ramps near Cracker Barrel was not acceptable.

Greiner indicated they would review Alternate No. 3 further and would schedule another meeting to discuss this alternate after a traffic analysis was completed.

The meeting adjourned at 3:15 p.m.

KM:kc

Greiner

AGENDA

City of Lakeland
Coordination Meeting

I-4 Roadway Improvements
From East of U.S. 98 to East of S.R. 33
State Project No. 16320-1434
W.P.I. No. 1147947

July 27, 1994

1:30 PM

City of Lakeland, City Hall

I. Introduction

II. Carpenter's Way Road Overpass

III. C.R. 582 Interchange

IV. Old Combee Road Interchange

V. Conclusions

Name	Representation	Phone
Ken Murphy	Greiner	(813) 286-1711
T.J. Martin	Baker	(813) 289-7546
Jeff Sawyer	"	"
John H. DeWinkler	FDOT	(813) 533-8161
Sheila Sterling	City of Lakeland	499-6024
JIMMIE L GILL	GREINER	813-286-1711
Pat Steed	City of Lakeland	(813) 499-6011
Cheryl Jones	Sverdrup	(813) 534-8500
Jack Montpetit	Sverdrup	(813) 534-8500
BRUCE KISTLER	CITY OF LAKELAND	(813) 499-6094

Baker

RECEIVED
JAN 30 1995

Michael Baker Jr., Inc.
1408 North Westshore Boulevard
Suite 612
Tampa, Florida 33607
Box 21387, Tampa, FL 33622-1387

(813) 289-7546
FAX (813) 289-5651

January 24, 1995

I-4 Project Development and Environment Study
State Project No. 16320-1402
Work Program Item No. 1147948
Federal-Aid Project No. ACDH-4-1(130)25

MEETING MINUTES

I-4 Wildlife Agency Coordination Meeting

The following persons met at the U.S. Fish and Wildlife Service office in Vero Beach, FL at 10:00 a.m. on January 23, 1995 to discuss the I-4 PD&E threatened and endangered species coordination.

U.S. Fish and Wildlife Service (USFWS)
Bob Pace
Jane Tutton

Florida Game and Fresh Water Fish Commission (FGFWFC)
Mary Ann Poole
Tim King

Florida Department of Transportation (FDOT)
Mark Schulz

Parsons Brinckerhoff Quade & Douglas, Inc. (PBQD)
Roger Menendez
Dave Reutter

Sverdrup, Inc.
Ray Moses

Michael Baker, Jr., Inc. (Baker)
Jeff Sawyer

The purpose of this meeting was to present to the USFWS and the FGFWFC a project overview, discuss the efforts to date on wildlife identification in the project corridor and solicit agency comments on survey methodology and potential impacts.

DISCUSSION:

The phasing of the I-4 project was presented by Mark Schulz and Jeff Sawyer (Master Plan, PD&E, design, right-of-way acquisition and construction). It was noted that the impacts to be discussed would be for no additional I-4 mainline right-of-way from Memorial Boulevard to SR 33 and 13.4 m (44 ft) of additional right-of-way from SR 33 to the Osceola County Line; not the 37.8 m (124 ft) of additional right-of-way called for in the I-4 Master Plan. All impacts to habitat are linear, generally 6.7 m (22 ft) on either side of existing right-of-way from SR 33 to Osceola County line (except for future storm water pond sites, mitigation sites and interchange right-of-way. It was pointed out that qualified biologists from the PD&E

and design project teams have been canvasing the I-4 corridor for over a year observing and evaluating wildlife and habitat. Roger Menendez and Dave Reutter described the Florida scrub jay clans discovered near the CR 54 overpass. The fall surveys have been completed following the approved methodology, the spring surveys will be conducted in March/April of 1995. The agencies commented that since the clan territories span I-4, road crossings should be noted during the spring surveys. Dave Reutter described that I-4 is in cut at that location and so the likelihood of jays being struck by vehicles is diminished. The USFWS was not aware that Florida scrub jays occupied a territory at that location (this location was not reported by the Archbold Station) and requested a map showing the boundaries of the clans. A copy of the I-4 Biological Assessment (with accompanying maps) will be given to USFWS and FGFWFC when completed (May or June of 1995).

The wildlife comments in the FGFWFC letter of October 27, 1994 (attached) were discussed:

Sherman's fox squirrel - It was noted that no suitable nesting habitat is within proposed right-of-way. PBQD noted there were no sightings during any of their field work. Mary Ann Poole suggested that surveys for nesting sites be conducted prior to construction (construction noise and other activity could scare the squirrels from the nest). A recommendation will be included in the PER and Environmental Document that impacted potential nesting habitats will be surveyed for nesting sites prior to construction. Any surveys will be coordinated with the USFWS and FGFWFC.

Florida sandhill crane - It was noted that no suitable nesting habitat (such as pickerel weed marsh) is within the proposed right-of-way. The agencies suggested that construction should avoid the nesting season. Aerial surveys for nesting sites should be conducted for a 1/4 mile radius of the project prior to construction and if nesting sites are located, they should be monitored by a qualified biologist to avoid scaring the cranes from the nest. A recommendation will be included in the PER and Environmental Document that potential nesting habitats within 1/4 mile of the project will be surveyed for nesting sites prior to construction. Any surveys will be coordinated with the USFWS and FGFWFC.

Southeastern American kestrel - It was noted that competent biologists have been observing the corridor for over a year (including the summer of 1994) and have not noted evidence of the Southeastern American kestrel. Linear impacts to nesting habitat areas are not considered significant due to the extensive habitat areas outside the I-4 impact zone. PBQD has reviewed the guidelines described in the FGFWFC Nongame Wildlife Technical Report No. 13, "Ecology and Habitat Protection Needs of the Southeastern American Kestrel (Falco sparvarius paulus) on Large-Scale Development Sites in Florida." The agencies suggested that known nesting sites/trees be protected and that surveys for nesting sites in the impacted area be conducted prior to construction. A recommendation will be included in the PER and Environmental Document that impacted potential nesting habitats will be surveyed for nesting sites prior to construction. Any surveys will be coordinated with the USFWS and FGFWFC.

Herpetofauna - Special protection provisions for Eastern indigo snakes (see attached example) will be included in the recommendations of the PER and Environmental Document. Warning posters should be posted at known habitat sites and at construction staging areas. Warning posters may be available from R.L. Weigt, Environmental Consultants, Inc., 10762 S.E. Federal Highway, Hobe Sound, FL 33455, (407) 546-6255. Education, awareness and specific location of known individuals should be documented and discussed

with the contractor prior to construction.

Southern bald eagle - It is felt that agency coordination for southern bald eagles is adequate. A recommendation for protection of eagle nesting territories will be included in the PER and Environmental Document.

GENERAL WILDLIFE DISCUSSION:

Jeff Toussant (Sverdrup) and John DeWinkler (FDOT) met with John Ryan (representing the I-4 Environmental Advisory Group) regarding wildlife crossing recommendations. Two crossing locations were noted: 1) at Gator Creek just west of the SR 33 interchange, and 2) between the CR 557 and US 27 interchanges (Green Swamp). One area was identified in the Green Swamp as a potential location (about 1.7 miles east of CR 557).

The use of low-level bridges (to span muck areas in Segment 6) as wildlife crossings was well received by the agencies. The existing cattle crossing (3.3 miles from CR 557) can provide credit for wildlife crossing.

Tim King inquired about the possibility of expanding the SR 33 bridge to include a greenway connection (wildlife crossing). Jeff Toussant (Sverdrup) will contact Tim King about the potential for a wildlife crossing east of SR 33.

Mary Ann Poole stressed that, in the absence of formal survey or protection guidelines, "use common sense".

Prepared by: Michael Baker, Jr., Inc.

Jeff Sawyer
Senior Planner

Date: 1/27/95

Attachments

xc: T.J. Martin, Michael Baker, Jr., Inc.
Jeff Tousant, Sverdrup, Inc.
John Dewinkler, FDOT
Attendees

27 January 1995

Meeting Minutes

I-4 Protected Species Coordination Meeting
USFWS Office
Vero Beach, FL
24 January 1995

Attendees:	Ray Moses	Sverdrup
	Mark Schulz	FDOT
	Roger Menendez	PB, Inc.
	David Reutter	PB, Inc.
	Mary Ann Poole	FGFWFC
	Tim King	FGFWFC
	Jane Tutton	USFWS
	Bob Pace	USFWS
	Jeff Sawyer	Baker Eng.

Discussions were held with agency personnel regarding protected species occurrence within the scope of the I-4 project. Project scope was better defined for the agency personnel. Initial consultation with the agencies considered the maximum right-of-way of 424′ north and south of the existing roadway as the study corridor. Preliminary engineering suggests that a fraction of this area (24′ either side in rural sections) will be physically impacted.

Specific occurrences of protected species up to the present were discussed. These included the presence of scrub jays (E)(Aphelocoma coerulescens coerulescens) and gopher tortoises (SSC) (Gopherus polyphemus). Scrub jay surveys have been completed for the fall survey season. Spring surveys will be completed and final reports submitted to all concerned agencies. Gopher tortoise occurrence is sporadic throughout the corridor. No large concentrations (≥ 0.4 individuals/acre) occurs within the corridor. Previous gopher tortoise surveys of the proposed southern rest stop area have already identified this area of concern. Initial concerns in this area also included "burrowing mice and owls". Recent surveys of the rest stop area indicate no presence of burrowing owls (Speotyto cunicularia) or Florida mice (Podomys floridanus), both considered Species of Special Concern (SSC).

Discussion of comments solicited from the agencies regarding I-4 Threatened and Endangered Species Agency Coordination Report addressed specific species. In regards to Sherman's fox squirrels (SSC)(Sciurus niger shermani), FL. sandhill cranes (T)(Grus canadensis pratensis), and S.E. American kestrel (T)(Falco

sparverius paulus), and bald eagle (T)(Haliaeetus leucocephalus), nesting habitat is of primary concern. Surveys of appropriate nesting habitat for these species should be made if construction is to begin during the nesting season. In reference to herpetofauna survey data, the linear nature of the impacts limits the potential for affecting important habitat. Areas of concern should be identified and provisional statements included in the permits which require educational material be presented to construction personnel prior to construction for the safegaurding of these species.

Further discussion of wildlife issues revolved around recommendations for the location and type of wildlife crossings. Tim King indicated an area east of SR 33 as a potential location based on ongoing corridor analysis and Florida Greenways recommended routes. Recommended locations west of SR 33

1-24-18

Name	Agency	Telephone
Ray Moses	Sverdrup	534-2500
Mark A. Schulz	FDOT	(813) 533-8161 x2357
ROGER MENENDEZ	PARSONS BRINCKERHOFF	813/874-5300
DAVID REUTTER	PB INC.	813/874-5300
Mary Ann Poole	FGFWFC	407-778-5094
TIM KING	FGFWFC	813/648-3210
JANE TUTTON	USFWS	407 562-3909
Bob Pace	USFWS	"
JEFF SAWYER	BAKER	(813) 289-7546

Parsons

Minutes of Meeting

Sverdrup
CORPORATION

SWFWMD COORDINATION MEETING
I-4 WIDENING - POLK COUNTY

PRELIMINARY WETLAND IMPACTS AND POTENTIAL AVOIDANCE CONCEPTS

DATE: April 17, 1995 - 1:30 p.m.

PARTICIPANTS: (see attached attendance sheet)

The referenced meeting was held in Sverdrup's Bartow office.

Cheryl Jones gave a brief overview of the I-4 widening program and stated that the purpose of the meeting was to obtain input from SWFWMD regarding the balance of priority of stormwater treatment, attenuation, wetland impact avoidance, and upland impact avoidance. She indicated that the design sections of particular concern for this issue are Sections 5, 6, and 7.

Don Graham described Sections 5, 6, and 7 and the affected drainage basins. He noted that the stormwater conveyance and management design and the permit applications will be for the ultimate typical section (ten lanes with rail envelope in median). Don discussed the conventional approach to stormwater treatment and the magnitude of wetland impacts associated with this approach. This impact is significant due to the extensive area of wetlands located adjacent to I-4. The topography of Sections 5, 6, and 7 is such that there are no real transitional areas adjacent to wetlands that could serve more efficiently as stormwater management areas. Instead, enormous excavations in uplands areas next to wetlands would be required to provide the required treatment and attenuation. The quality of the few uplands areas in each section should be addressed for their value as habitat. Don then presented the alternative of providing no drainage swales in the areas where I-4 goes through wetlands, which would provide no stormwater treatment or attenuation, but would reduce wetland impacts, floodplain impacts, and construction cost (less roadway fill).

Subsequent discussion:

- Bill Hartman of SWFWMD agreed that it would not make sense to impact wetlands to construct ditches. He suggested we look for areas for equivalent compensatory treatment.
- Bill indicated that he might consider some areas for direct discharge as long as compensatory treatment elsewhere is provided. Some areas, however, may need pretreatment swales.

- MORE -

DISTRIBUTION: Participants (see attached list)
Norm Findley (Bowyer-Singleton)
Tom Montgomery (Tomasino)
CLC

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335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

- In reference to offsite compensatory treatment, Bill stated that the compensation should be for the same surface area, but not necessarily the same traffic volumes. He also stated that the compensation would not necessarily be required in the same basin. He agreed that it was probably best not to propose compensatory treatment on roads other than State Roads.
- David Bishof of SWFWMD asked that other Best Management Practices (BMP's) or innovative approaches be addressed during design. He would have a problem with the concept of discharging untreated stormwater runoff to wetlands.
- Bill suggested that we look at designs and alternatives used for I-4 in Hillsborough County.
- Don Graham suggested that one BMP might be to provide for oil and grease separation within inlets of key structures.
- Bill asked if exfiltration systems were considered for stormwater treatment. Don Graham and Tracy Hood responded that they are not feasible nor are they desirable from a maintenance perspective.
- Don stated that a closed stormwater conveyance system in Design Sections 5, 6, and 7 would be cost prohibitive.
- Bill noted that by reducing our impacts to wetlands by 40± acres as was stated for the "No Swale" alternative, that approximately 100 acres of wetlands creation could be avoided. Funds for creation could go to constructing closed storm sewers, exfiltration, etc.
- Bill stated that the stormwater attenuation must be accommodated within the same sub-basin and that it would be acceptable to attenuate within adjacent wetlands as long as pre-treatment was accomplished.
- Tracy Hood suggested treatment of only the additional proposed lanes on I-4 (i.e., treat additional inside lanes and leave the four outside lanes to discharge directly to wetlands, as the existing four lanes currently do). Bill concurred with that approach.
- In reference to previous studies done in the area, Bill recommended that we contact Tom Harrison, SWFWMD - Brooksville, concerning the Lake Lowry system, and Hung Nguyen, SWFWMD - Brooksville, concerning the Peace River system.
- Bill recommended that we schedule future meetings with SWFWMD to discuss each individual Design Section in order to discuss alternatives and reach concurrence on a project-specific basis. Bill will see that the SWFWMD reviewer who will be responsible for each section attends these meetings.
- Bill asked Don when the permit applications will be submitted to SWFWMD. Don stated that possibly the earliest permit applications would be during the fall of 1995. Bill then stated that, based on that time frame, these applications will probably go in under the new Environmental Resources Permit rule (i.e., one permit to include dredge and fill and stormwater Management).

The meeting ended at approximately 3:30 p.m.

The above is our understanding of what was related in this meeting. If you have comments, please advise Don Graham at (813) 534-8500 at your earliest convenience.

Sverdrup
CORPORATION

335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

I-4 WIDENING - DISTRICT ONE

DESIGN SECTION ALL
TOPIC WETLAND IMPACT & AVOIDANCE

DATE 4/17/95
TIME 1:30 PM
LOCATION SVERDRUP

NAME	COMPANY	PHONE NO.
Cheryl Jones	Sverdrup	(813) 534-8500
DORIE FAULKNER	SCHEDA ECOL.	(813) 971-3755
Pete Kellelw	PBSJ	(813) 877-7275
Jack Montpetit	Sverdrup	(813) 534-8500
JEFF SAWYER	BAKER	(813) 289-7546
Jeff Toussaint	Sverdrup	813 534 8500
Brian McDermott	Volkert	813 875-1365
TRACY HOOD	TAMPA BAY ENGINEER.	813 531-3505
Jim Wint	FDOT	813 533-8161
John H. DeWinkler	FDOT -D1	(813) 533 8161 Ext 2206
Ray G. Moses	Sverdrup	534-8500
DONALD P. GRAHAM	CARR Smith	534-8500
Michael D Finch	FDOT/Drainage	(813) 533-8161, 2272
JAMES [illegible] JR	FDOT/DRAINAGE	(813) 533-[illegible]
William A. Hartmann	SWFWMD / SURF. WTR.	813-534-1448 (x6002)
David Bishop	SWFWMD / Environmental	(813)(941) 534-1448
Nicole Whittaker	Parsons Brinckerhoff	(813) 874-5300
Jeff Wilson	PB	(813) 874-5300

Sverdrup
CORPORATION
BARTOW, FLORIDA

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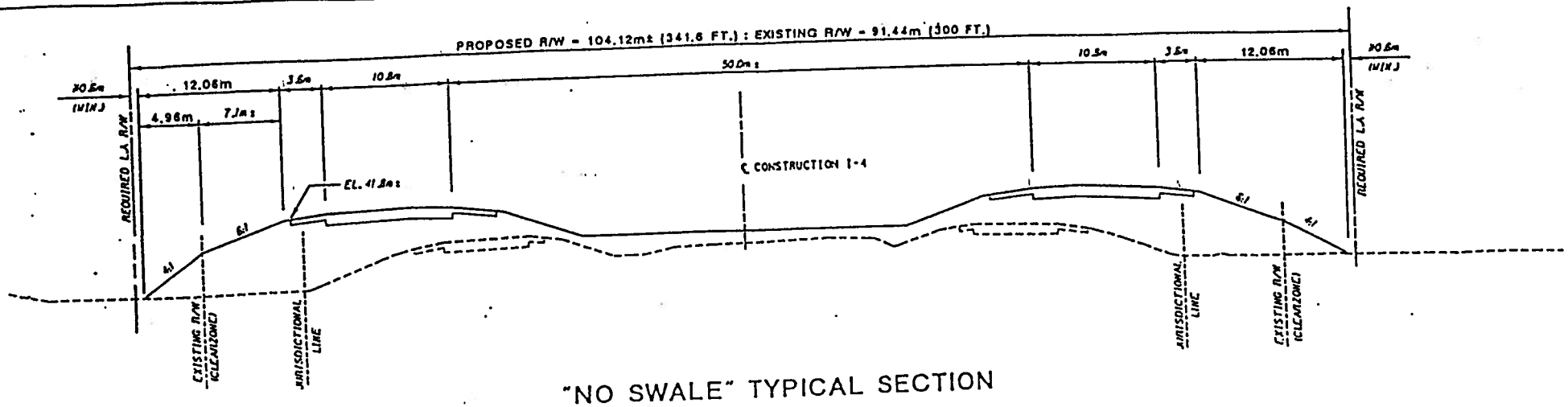
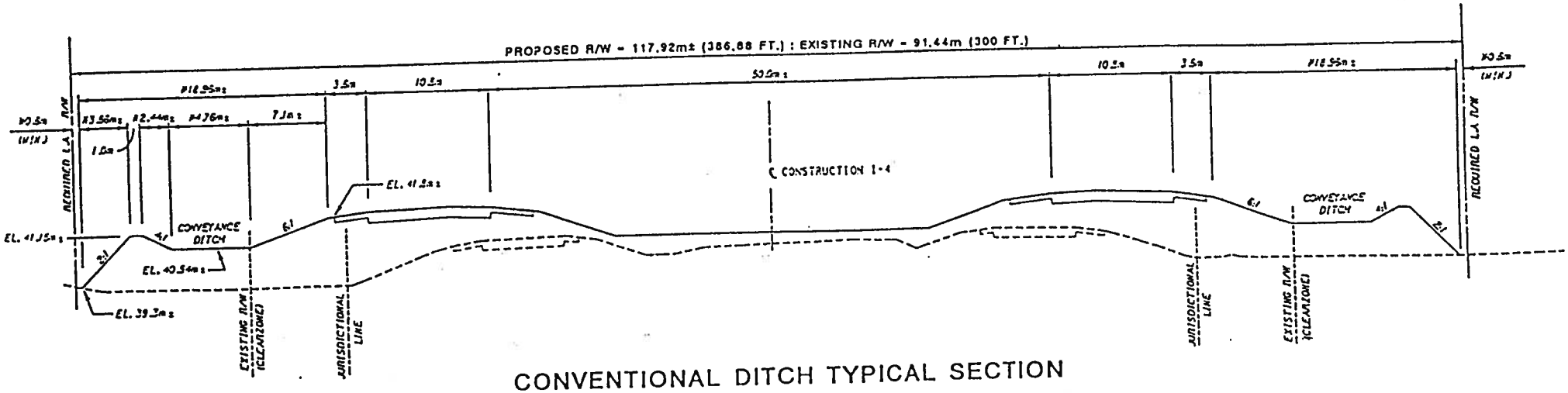


"NO SWALE" TYPICAL SECTION



CONVENTIONAL DITCH TYPICAL SECTION

EXHIBIT 2

ALTERNATIVE TYPICAL SECTIONS

# DENOTES HORIZONTAL DIMENSIONS WHICH VARY

PRELIMINARY

Interstate 4 - Polk County
Area of Wetland Impact
by Wetland Classification
and Study Segment

Wetland Habitat Classification	Area of Impact ** by Design Section (acres)								
	2	3	4	5	6	7	8	9	Total
PFO	0.45	12.2	1.30	35.33	49.96	7.28			106.52
PEM		1.1	0.84	4.28	0.12	4.64			10.98
PSS		9.9	9.01	1.75	28.61	0.91			50.18
POWHx			0.07	1.67					1.74
R2UBx		4.5							4.5
L1UBHx			0.04						0.04
PUBHx									
ROWHx	1.63								1.63
Total Impact Area	2.08	27.7	11.26	43.03	78.69	12.83			175.59

Classification Description

PFO - Palustrine Forested
PEM - Palustrine Emergent
PSS - Palustrine Scrub/Shrub
POWHx - Palustrine, Open Water, Permanently Flooded, Excavated
R2UBx - Riverine, Lower Perennial, Unconsolidated Bottom, Excavated
L1UBHx - Lacustrine, Limnetic, Unconsolidated Bottom, Excavated
PUBHx - Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
ROWHx - Riverine, Open Water, Excavated

** Area of Impact Based on Preliminary Alignment, Desig
Typical Section and Stormwater Management Impact

Date: 03/13/95
File: 08 - 002. 003, 004, 005, 006, 007

cc: John H. DeWinkler, Mike Finch, Jim Wilt (FDOT), Dan Pennington, FDEP
CAJ, JPT, JRM, DPG

h:\013266\admn\table001.dpg

EXHIBIT 3

Minutes of Meeting

Sverdrup
CORPORATION

I-4 WIDENING PROGRAM - DISTRICT ONE
COORDINATION FOR WILDLIFE CROSSINGS
DESIGN SECTIONS 4 AND 6

DATE: May 26, 1995

TIME: 1:30 p.m.

PARTICIPANTS: (see attached sign-in sheet)

The referenced meeting was held in Sverdrup's Bartow office. The purpose was for the affected design consultants to present concepts for the proposed wildlife crossings to Mary Ann Poole of Florida Game and Fresh Water Fish Commission (FGFWFC), to ensure that concepts being developed will meet the agency's requirements. The PD&E consultant was also represented at the meeting so that the environmental document currently being prepared will also accurately address the wildlife crossings.

Section 6. Brian McDermott of David Volkert Associates presented the crossing concept being developed for Design Section 6. Bridges are proposed at two locations within Section 6 because of poor geotechnical conditions (deep muck deposits). These bridges will also function as wildlife crossings. Anticipated lengths are approximately 110m and 128m. Feasible structure types include AASHTO girders (approx. 18.33m spans) and flat slab (approx. 9.17m spans). It was agreed that the AASHTO girder alternate would be preferable because: 1) it is expected to be more economical because fewer piers are required than with the flat slab alternate; 2) it should be less noisy than the flat slab alternate, and 3) it provides for a more open, less restricted area for wildlife to cross underneath. Unless other significant factors come to light during the preparation of the Bridge Development Report (BDR), it is expected that the two bridges will be AASHTO girder structures. Final span lengths will be determined in the BDR, but span lengths of less than 12.2m will not be recommended, since that is the minimum span length that has been constructed to date and has been documented to function (Alligator Alley).

- MORE -

DISTRIBUTION: Participants
Bradley J. Hartman (FGFWFC, Tallahassee)
Terry Gilbert (FGFWFC, Tallahassee)
Tim King (FGFWFC, Lakeland)
Dan Pennington (FDEP, Tallahassee)
Bud Cates (FDEP, Tallahassee)
Lance Hart (SJRWMD, Orlando)
Rebecca Jetton (DCA, Bartow)
Jim Wilt (FDOT District 1)
JRM, DPG, CLC, RAF, GJR

FILE: 08, 36 - 004, 006
h:\013266\admn\min0041.caj

335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

The vertical clearance under the bridges will be 2.5m above Seasonal High Water (SHW). At the bridge ends, normal slope protection will be provided. Then, level, 3.0m wide maintenance berms at an elevation of approximately 0.3m above SHW will be constructed. From there the fill will slope at a rate of 10:1 down to the water and/or existing ground.

The ground conditions under the crossing were discussed. The existing roadway embankment (which is located where the future special purpose/HOV lanes will be) will be removed down to match the elevation of the existing ground along the north and south R/W lines. The remainder of the area under the bridges will be left as is. No provisions will made to specifically provide for part of the crossing to be wet and part dry.

It was agreed that high fencing should be provided across the median, between each pair of dual bridges, to keep wildlife from entering the median area. The configuration of fencing along the R/W lines will be determined at a future date and will be affected by whether the adjacent property is public or private at the time of construction.

Section 4. Steve Molecki of Post Buckley Schuh & Jernigan presented the wildlife crossing concept developed for Design Section 4. The proposed pair of bridges will be located near the eastern boundary of the large wetland area that straddles I-4 between SR 33 and the Polk County Parkway interchange. They will provide for a 30m crossing from toe of embankment slope to toe of embankment slope under the bridges. PBS&J has looked at two- and three-span structure alternates, using Type III and Type II AASHTO girders, respectively. They will also evaluate a flat slab structure type in the BDR. As with Section 6, span lengths of less than 12.2m will not be recommended.

A drainage channel will be constructed under the bridges to accommodate the drainage that is currently being carried in the existing box culvert located approximately at Station 378. The side slopes of the channel will be as flat as possible, while still meeting hydraulic requirements. Unless roadway design constraints dictate otherwise (such as location of future proposed slip ramp), the bridges will be centered lengthwise over the existing culvert/channel location.

The vertical clearance under the bridges will be 2.5m above dry ground (since SHW is below the existing ground elevation). At the bridge ends, normal slope protection will be provided, down to existing ground.

The existing roadway embankment (which is located where the future special purpose/HOV lanes will be) will be removed down to match the elevation of the existing ground along the north and south R/W lines. The remainder of the area under the bridges will be left as is, except for construction of the drainage channel as discussed above. The requirements for fencing will be the same as for Section 6.

Wild life Crossing Coordination

5/26/95 1:30

Name	Representing	Phone
Cheryl Jones	Sverdrup	(813) 534-8500
John H. DeWinkler	FDOT- D1	(813) 533-8161
Mary Ann Poole	FGFWFC	407-778-5094
Pete Kellchui	PBS+J	(813) 877-7275
Steve Malecki	PBS&J	877-7275
Shelly Flaherty	Baker	(813) 289-7546
JEFF SAWYER	BAKER	"
RICHARD REYNOLDS	VOLKERT	(813) 875-1365
JACK ROBERTS	VOLKERT	" "
Brian McDermott	Völkert	" "
Jeff Toussant	Sverdrup	813 534 8500
Nicole Whittaker	PB	(813) 874-5300
Ray G. Moses	sverdrup	813 - 534 - 8500
DAVID REUTER	PB	[illegible]

Orig: I4 Project File

CC: MJB/JBS/I4 Book
SDF/PER Mtg Min
Appendix?
TJM
7/7/95

Sverdrup

Sverdrup Civil, Inc.
335 East Van Fleet Drive
P.O. Box 1636
Bartow, Florida 33831

813 534-8500
FAX 813 533-6692

TO: Michael Baker, Jr., Inc.
1408 N. Westshore Blvd, Suite 612
PO Box 21387
Tampa, FL - 33622-1387

DATE: July 6, 1995

ATTN: Mr. T. J. Martin

JOB NO. _____ PROJECT: 16320 - 1402

THE FOLLOWING IS TRANSMITTED

- [x] HEREWITH.
- [ ] UNDER SEPARATE COVER.
- [ ] FOR YOUR USE OR DISTRIBUTION.
- [ ] FOR REVIEW AND COMMENTS.
- [ ] FOR CORRECTION AND RESUBMITTAL.

QUANTITY	DESCRIPTION
1	Minutes of June 22, 1995 meeting with SWFWMD

THIS TRANSMITTAL IS PER

- [ ] NORMAL PROCEDURE.
- [ ] YOUR LETTER.
- [ ] YOUR TELEGRAM.
- [ ] YOUR TELEPHONE REQUEST.

DATED _____ FROM YOUR _____ TO OUR _____

REMARKS:

RECEIVED
JUL - 7 1995
MICHAEL BAKER, JR., INC.
TAMPA, FL

Sverdrup Civil, Inc.

BY Ray D. Moses
PD&E Project Manager

CC: 16 - 010

Minutes of Meeting

Sverdrup
CORPORATION

DATE: JUNE 22, 1995

TIME: 10:00 A.M.

SUBJECT: I-4 DESIGN IN POLK COUNTY
WETLAND MITIGATION BANKING MEETING
AT SVERDRUP BARTOW CONFERENCE ROOM

PARTICIPANTS:

CHERYL JONES	SVERDRUP	941-534-8500
ED MCGUIRE	SVERDRUP	941-534-8500
JOHN H. DEWINKLER	FDOT-DISTRICT 1	941-533-8161
JIM WILT	FDOT-DISTRICT 1	941-533-8161
JOHN HARTLEY	FDOT-DISTRICT 1	941-533-8161
MICHAEL D. FINCH	FDOT-DISTRICT 1	941-533-8161
SCOTT KAMIEN	PBS&J (GEC FDOT DISTRICT 1)	941-954-4036
CLARK HULL	SWFWMD BROOKSVILLE	904-796-7211

PURPOSE OF MEETING:

- For SWFWMD to advise FDOT about mitigation banking conditions not just for the I-4 project but for all FDOT projects.
- For FDOT to get an acceptable plan of action to address wetland mitigation in the I-4 corridor of Polk County.

MEETING PRESENTATION BY MR. HULL:

- SWFWMD would like wetland mitigation of FDOT roadway projects to utilize the banking program instead of the standard kind-for-kind wetland creation which has occurred in the past.

DISTRIBUTION: Participants
Cathie Cash (Sverdrup Tallahassee)
JRM, JPT, RGM, DPG

FILE: 08,16 - 001

- SWFWMD's Board has express concerns that approval of a wetland bank gives the wetland bank owner automatic approval of wetland impacts. SWFWMD's staff has advised the Board and applicants that approving a wetland bank does not give automatic approval of wetland impacts. Each impact must be justified by indicating that other alternatives were considered and that impacts have been minimized.

- Not all roadway related wetland mitigation banking permits will have to go to the Board for approval. Only those projects which require SWFWMD to acquire land will go to the Board.

- Counties have express concern to the Board that large tracts of land will be removed from the tax rolls under the current plan for wetland banking. Although this is a valid concern for the Counties, it is an issue which must be handled outside the permitting process.

- SWFWMD has a 5-year plan which shows projects identified for acquisition and/or improvement along with funding or the lack of funding associated with the parcel. The SWFWMD 1995 Wetland Management Lands Trust Fund - Save Our Rivers/Preservation 2000 - Five Year Plan was distributed. A copy of the booklet's cover page is attached.

- Instead of buying land and creating a wetland area to bank against future wetland impacts, an applicant can provide funding for specific projects. SWFWMD cannot accept undesignated funds. The funds must be associated with specific elements of an Eco-system plan. Many wetlands, already owned by government agencies, are in need of restoration or improvement. Some areas need to have a master plan developed before improvements can occur. Therefore, an applicant can study an area to determine the land and improvements required, purchase land identified by the study, and do the improvements proposed by the study. The key aspect is that the applicant cannot just do a study. The mitigation banking project must include improvements. Also, just purchasing land is not acceptable if the land is in need of improvement. There are plenty of sites which are already in government ownership and are in need of improvements. Only land acquisition which requires no improvement will be considered an acceptable banking project. Finally, what the applicant proposes to do with the dollars provided in the banking project must equate to the wetland impacts expected.

- Wetland impacts must be offset by mitigation within the watershed basin of the impacted wetland as discussed in section 373.414(8) of the Florida Administrative Code. The geographic boundaries of the basin along with its local or regional function boundaries must be considered in defining the basin and where mitigation can occur. Using this approach will address cumulative impact considerations

associated with permitting the impacts and mitigation proposed. A copy of SWFWMD's current basin map was distributed and is attached. The applicant can work with SWFWMD staff to more accurately define the basin boundaries using field surveys or SWFWMD topographic maps. A CADD file of the map is available for use by the public.

- The U.S. Army Corps of Engineers (COE) has generally agreed with the SWFWMD basins by requiring the banking programs be placed within the COE basin boundaries. A copy of the COE basin map is attached. However, not all aspects of wetland mitigation banking are presently accepted by the COE. The applicant should check with the COE for each plan.

- An Eco-system plan must be developed by the applicant to address how the impacts and proposed mitigation will resolve accumulative impacts. Accumulative impacts include water quality issues, a determination on whether or not the present impacts within the watershed are so great that the watershed cannot accept more impacts, or the quantity and quality of the wetlands in the watershed are so great and good that the proposed impacts will be undetected within the watershed.

- All wetland improvement projects proposed in a mitigation banking plan must include plans preparation, specification preparation, bidding work, and construction supervision plus post construction monitoring and maintenance through the monitoring and maintenance period noted in the permit.

MEETING DISCUSSION REGARDING I-4:

- The I-4 project is located in 4 of SWFWMD's major watershed basins. SWFWMD's portion of the Kissimmee River basin flows into the St. Johns River Water Management District's jurisdictional area. The 4 basins are as follows:

  1- Hillsborough River
  2- Withlacoochee River (Green Swamp)
  3- Kissimmee River
  4- Peace River (Saddle Creek)

- The following design sections of the I-4 project are associated with the noted major watershed basins:

  Sections 1 & 2 - Hillsborough River
  Sections 3, 4, 5, 6, & 9 - Withlacoochee River
  Section 7 - Kissimmee River
  Sections 3 & 8 - Peace River

The eastern half of section 3 is in the Withlacoochee River basin and the western half of section 3 is in the Peace River basin. The eastern portion of section 3 and all of section 4 is within an area which has undetermined watershed boundaries. For the I-4 project, Clark Hull stated that the undetermined area should be included in the Withlacoochee River basin. A map of the I-4 project area with approximate basins boundaries is attached.

- SWFWMD will consider programs in the Peace River watershed which will mitigation for impacts in Sections 1 and 2 because Sections 1 and 2 have a regional influence on the Peace River system. The ScanAmerica site could be a project. However, all violations associated with the ScanAmerica site must be fixed as a part of the plan and cannot be included as wetland mitigation credit. Also, projects in the Saddle Creek watershed will be acceptable because the watershed has an Eco-plan with defined projects. The Bone Valley area was also considered as an acceptable area for improvements by SWFWMD. However, SWFWMD wants FDOT to investigate the possibility of contributing to improvements in the Cypress Creek project which is in the Hillsborough River watershed before projects in other watershed basins can be considered acceptable.

- Section 7 impact related improvements could be included in mitigation banking plans in FDOT District 5. Since this section is in the St. Johns River Water Management District (SJRWMD), coordination between the FDOT, SWFWMD and SJRWMD would be required. Section 9 borders on the Kissimmee River and Withlacoochee River watersheds. SJRWMD may be willing to allow SWFWMD to issue the permit for Sections 7 and 9 which are in their jurisdictions and may allow impacts in the Kissimmee River watershed to be mitigated for in the Withlacoochee River watershed. A meeting is presently scheduled for July 7, 1995 at 2:30pm at the SJRWMD office in Orlando which will include discussion on wetland banking for Sections 7 and 9. Clark Hull will attempt to attend the meeting and will contact any SWFWMD Bartow staff who may be required to attend the meeting. FDOT/Sverdrup will check with the SWFWMD and SJRWMD legal departments to determine if SJRWMD can give SWFWMD control of SJRWMD's section during the construction and monitoring/mitigation period.

CONCLUSIONS:

- FDOT District 1 should develop a 5-year program for wetland banking based on a basin by basin need. The plan should equate wetland banking projects with the expected wetland impacts within a basin and the 5-year capital improvement roadway projects.

- FDOT/Sverdrup will contact the SWFWMD staff in Tampa to determine potential of contributions to the Cypress Creek Watershed Improvement Plan.

- FDOT/Sverdrup will check with the SWFWMD and SJRWMD legal departments to determine if SJRWMD can give SWFWMD control of SJRWMD's section during the construction and monitoring/mitigation period of the I-4 Polk County project.

- The next meeting to discuss wetland mitigation banking will be July 19, 1995 at 10am at the Sverdrup Bartow conference room.

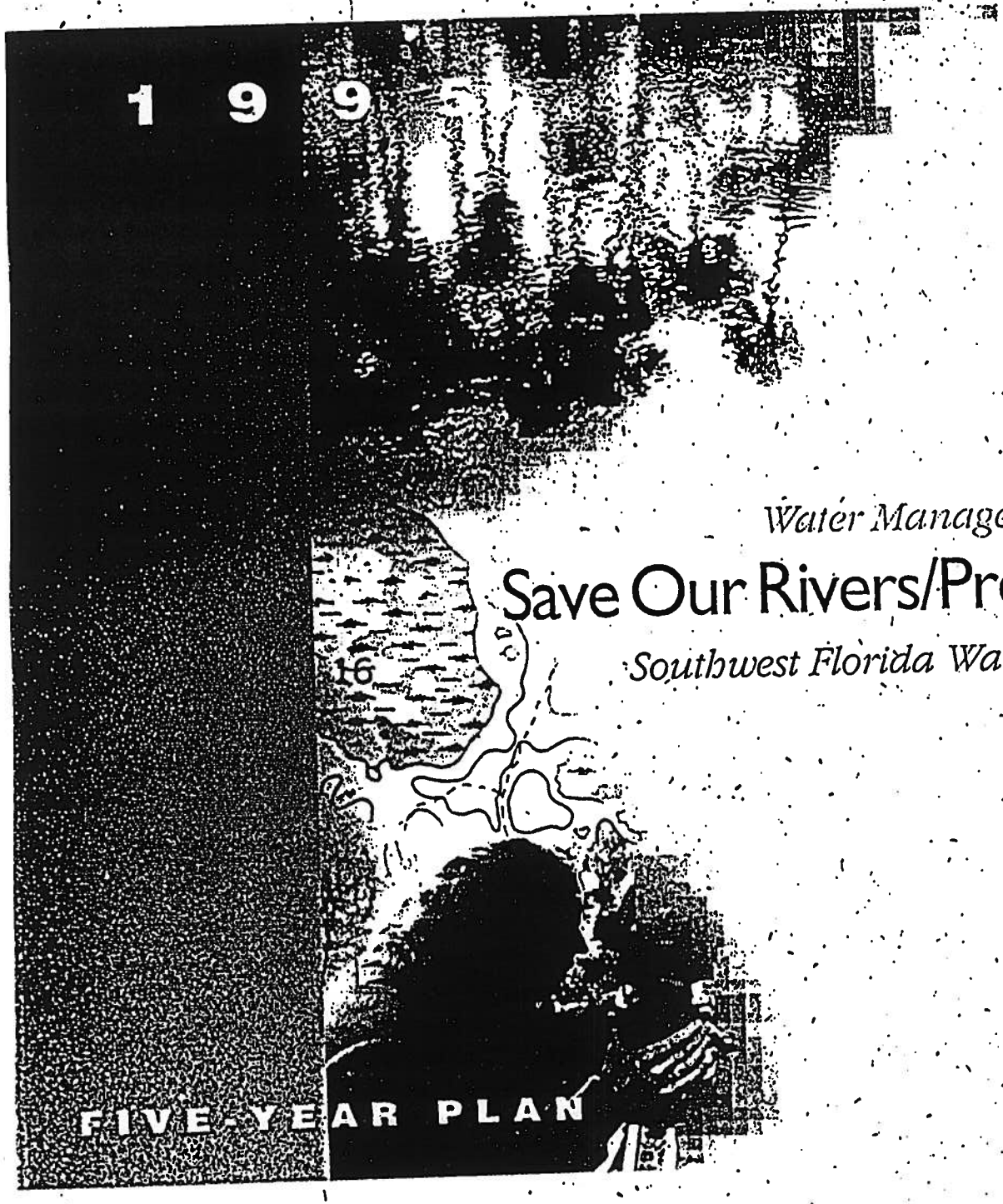
- FDOT/Sverdrup will prepare a draft wetland mitigation banking plan for the I-4 project area by July 14, 1995 and distribute it to the meeting attendees for discussion at the July 19, 1995 meeting at Sverdrup Bartow.

ATTACHMENTS: 1-SWFWMD 1995 Wetland Management Lands Trust Fund - Save Our Rivers/Preservation 2000 - Five Year Plan

2-SWFWMD Watershed Basin Map - 1995

3-COE Watershed Basin Map - 1995

4-An I-4 Project Map with Major Watershed Basin Boundaries



Water Management Lands Trust Fund

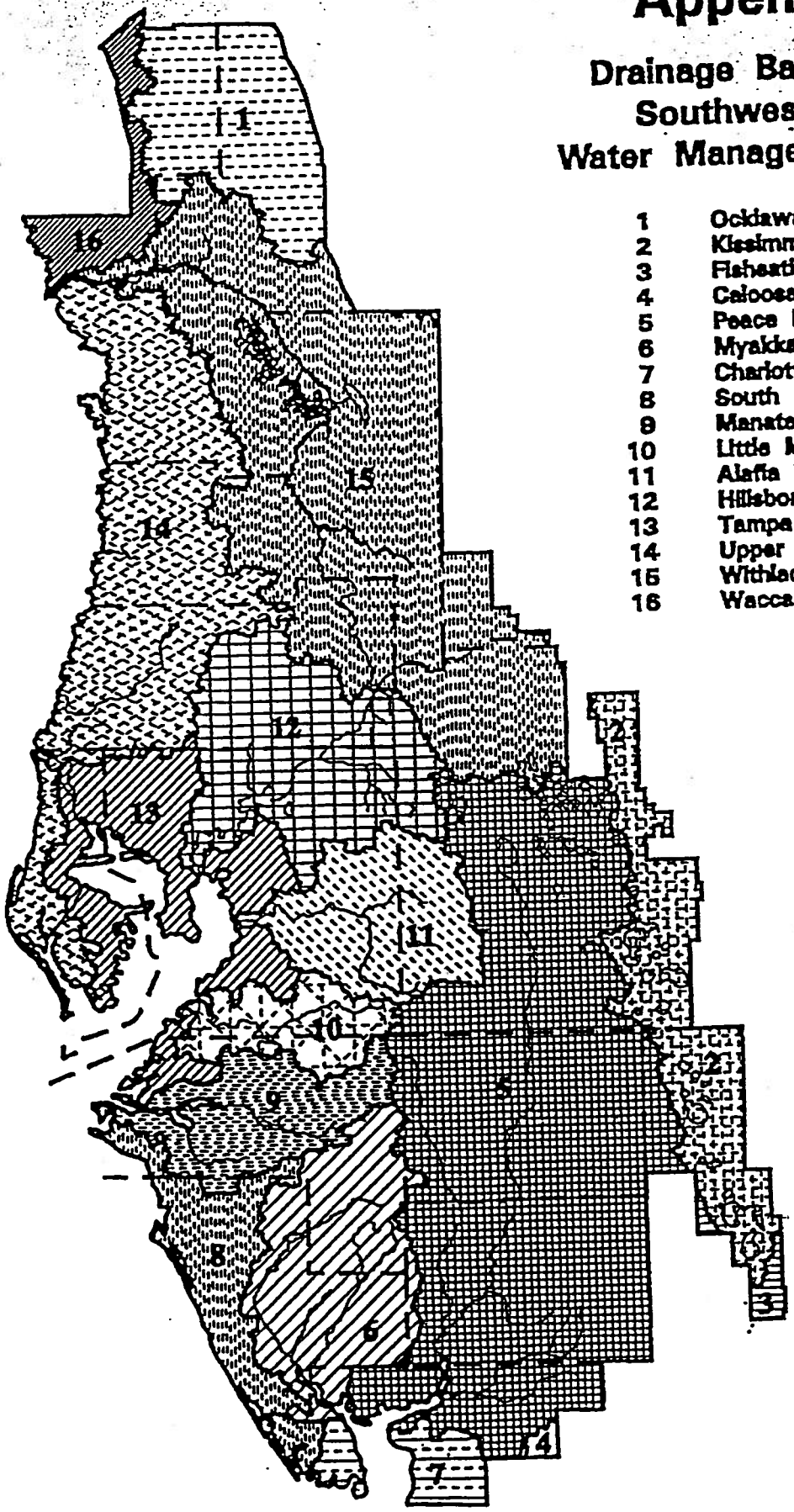
Save Our Rivers/Preservation 2000

Southwest Florida Water Management District

6/22/95

Appendix 6

Drainage Basins in the Southwest Florida Water Management District

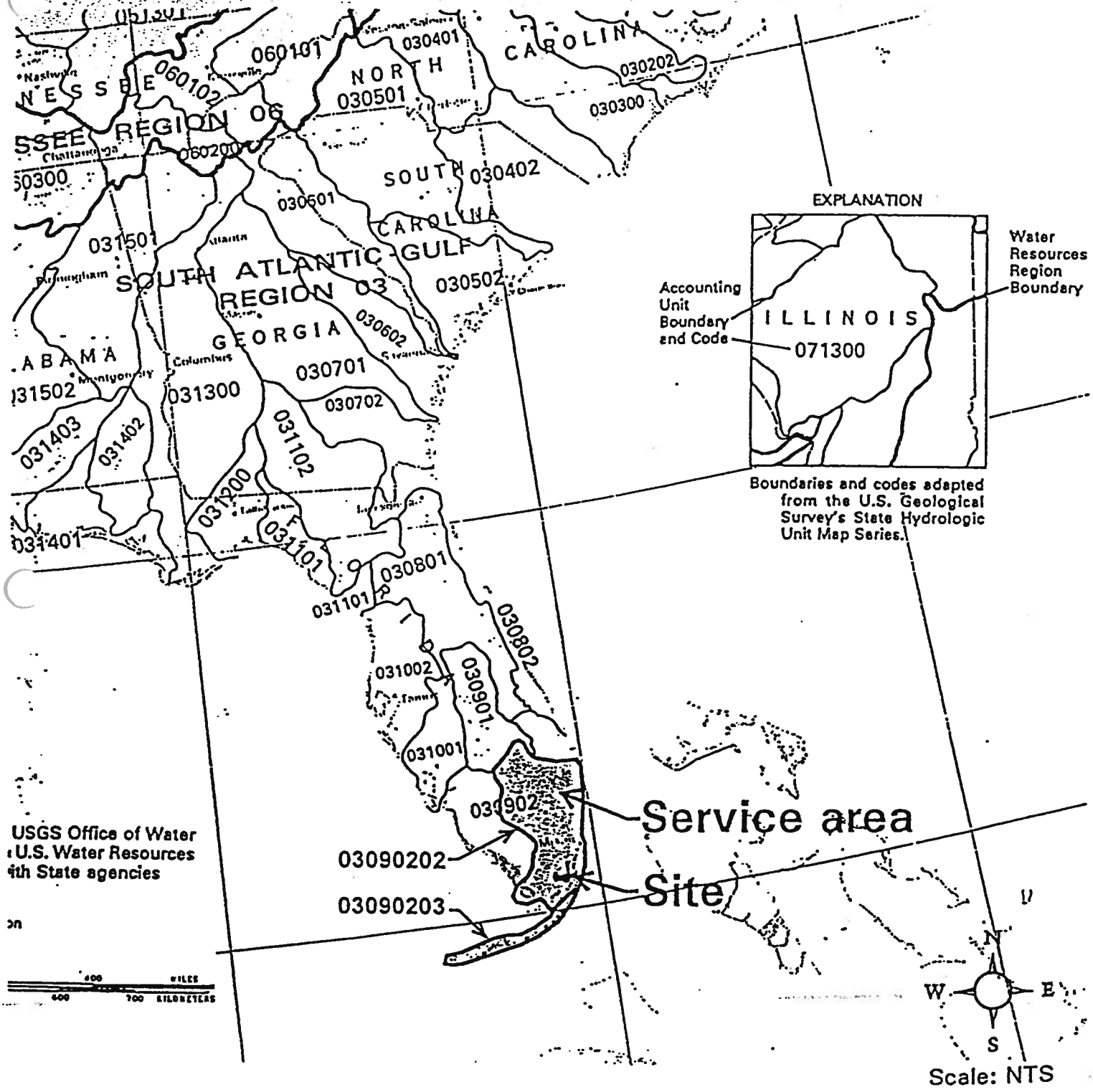


1 Ocklawaha River
2 Kissimmee Ridge
3 Fisheating Creek
4 Caloosahatchee River
5 Peace River
6 Myakka River
7 Charlotte Harbor Drainage
8 South Coastal Drainage
9 Manatee River
10 Little Manatee River
11 Alafia River
12 Hillsborough River
13 Tampa Bay Drainage
14 Upper Coastal Drainage
15 Withlacoochee River
16 Waccasassa River

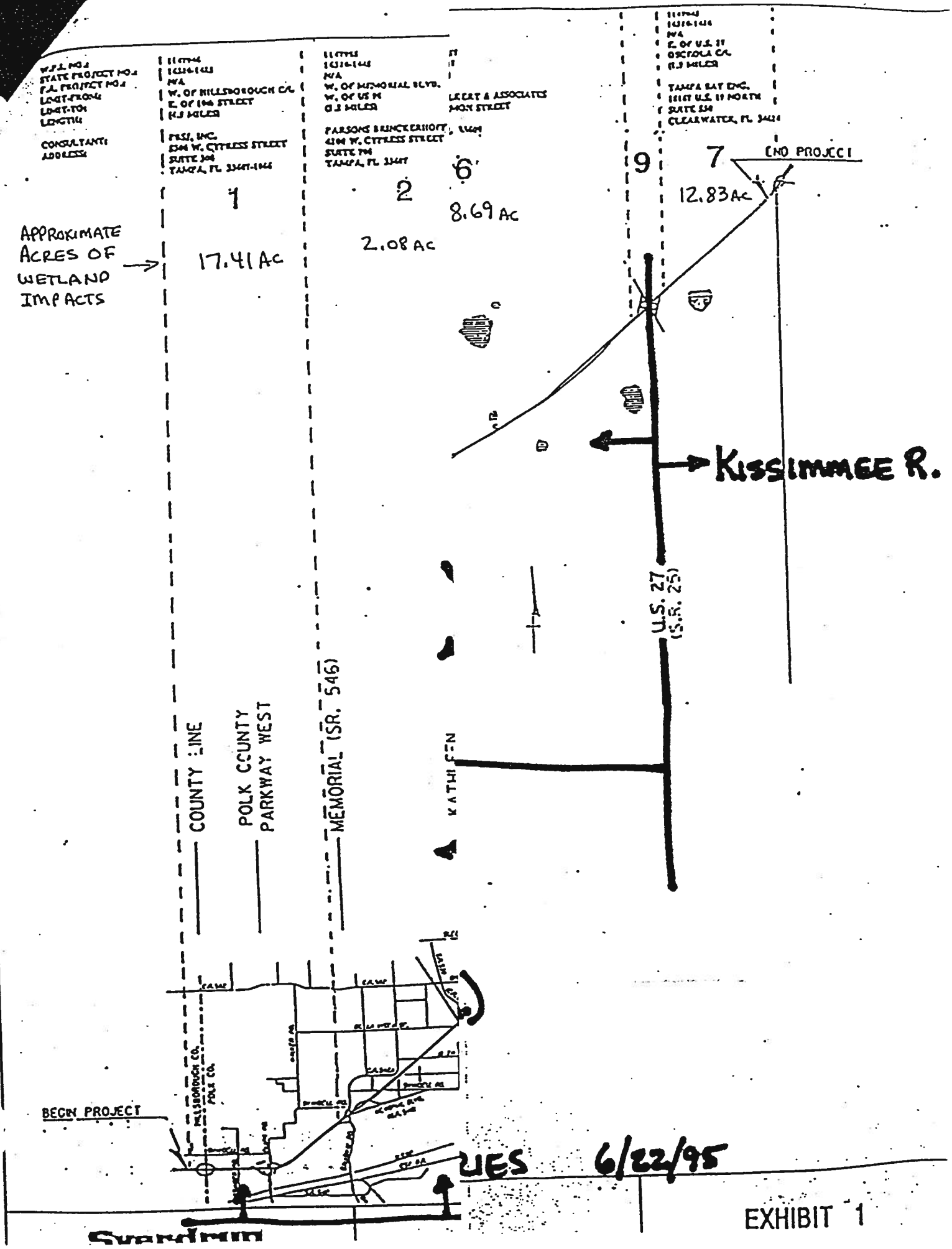
Mitigation Service Area

Figure 14

US ARMY CORPS OF ENGINEERS
WATERSHED BASIN MAP
6/22/95



Map Source: USGS - 1974 Hydrologic Unit Map
Prepared by: Cotleur Hearing and Howard Searcy
April 1995


APPROXIMATE ACRES OF WETLAND IMPACTS
1
17.41 Ac
2
2.08 Ac
6
8.69 Ac
9
7
12.83 Ac
END PROJECT
KISSIMMEE R.
U.S. 27 (S.R. 25)
COUNTY LINE
POLK COUNTY PARKWAY WEST
MEMORIAL (SR. 546)
BEGIN PROJECT
UES 6/22/95
EXHIBIT 1

Appendix C
Future Land Use Maps, Lakeland and Polk County

Orig: I4 PDSC Project Files
cc: TJM
JRM / ~~RAF~~ / FDOT / I4 Project Book
Mtg. Min.

Minutes of Meeting

Sverdrup
CORPORATION

I-4 WIDENING PROGRAM - DISTRICT ONE
FHWA COORDINATION MEETING

DATE: August 17, 1995 - 8:00 a.m.

PARTICIPANTS:

Marvin Williams	FHWA
Greg Scheiss	FHWA
Cheryl Jones	Sverdrup
Ray Moses	Sverdrup
Ed McGuire	Sverdrup
Jeff Toussant	Sverdrup
Don Graham	Carr Smith (Sverdrup Team)

The referenced meeting was held in Sverdrup's Bartow office. The meeting generally followed the attached agenda. Additional comments were as follows:

1. Ray Moses reported that Durwin Hanson (FDOT Tallahassee) will also attend the meeting on 8/23/95 in the District office to perform the pre-application review of the CR 582 and CR 557 IMRs, as well as the District committee review of the US 27 IMR.

2. Ray stated that the environmental determination package is being revised by the consultant and should be ready to forward to FHWA by next week. An Environmental Assessment is anticipated.

3. The anticipated schedule for Location Design Approval is March 1996.

4. Marvin requested that we make an unofficial submittal of the 30% plans for each design section so that he can perform a preliminary review. The submittal package will include the review comments made by the General Consultant and FDOT District 1 and the responses to the comments from the Design Consultants. Design documentation and calculations will not be submitted unless requested by Marvin after his review of the plans. Section 3 30% plans will be submitted first (since they were the first design section submitted to the General Consultant), then the others will be submitted as requested by Marvin, as he completes his reviews.

Attachment

DISTRIBUTION: Participants
John DeWinkler, Charlie Morgan (FDOT District 1)
T.J. Martin (Michael Baker)
JRM, RAF

RECEIVED
AUG 21 1995
MICHAEL BAKER, JR., INC
TAMPA, FL

FILE: 01, 10, 14, 20, 31, 34, 38-001, 010
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335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

5. It was noted that Section 1 is scheduled for Phase IV (100% plans) submittal in mid-September. R/W maps are final and were forwarded to R/W acquisition a couple of weeks ago. Acquisition is now beginning.

6. FHWA expressed concern about the master guide signing plan not being completed prior to completion of the PD&E and of the Phase II plans. Specifically, they are concerned about signing for the special purpose lanes and slip ramps. They indicated that they would not approve the concept if they cannot be convinced that it is possible to sign it effectively. Cheryl will discuss this concern with John DeWinkler next week.

7. FHWA also asked about the Pavement Type Selection Report and Pavement Design Packages. Cheryl indicated that FDOT will be preparing the pavement type selection report, and the each design consultant will prepare the pavement design package for their section. Neither Greg nor Marvin were aware if the Pavement Type Selection Report for Design Section 1 had been submitted to FHWA and approved. They will check their files to see if it was done possibly before Marvin became the Area Engineer.

8. Ed McGuire explained that the Section Consultants have been coordinating with the District 1 Access Management Office, and preliminary engineering is underway related to application of the access management rules at each interchange. In general, distances from interchange ramps to the first median opening will meet current requirements. The Consultants are currently evaluating right-of-way costs associated with eliminating access (including business damages where applicable) versus construction of frontage roads. Marvin will research the extent of FHWA participation beyond the limited access line. Normally they would only participate to the extent required to make the interchange function.

9. Greg questioned whether the single-point interchange proposed at US 98 will work for the ultimate situation. He noted that there have been instances where a single-point interchange was constructed in a high volume location, then a fly-over needed to be added at a later date because the single-point could not handle the volume. Sverdrup assured Greg that the traffic analysis is being carefully reviewed.

10. The US 27 interchange was discussed at length. Ed described the analysis that is underway to determine where the wall between the westbound to southbound fly-over and the US 27 southbound lanes should end. The concern is ramp traffic crossing three lanes of US 27 to access business on the west side of US 27. Greg and Marvin expressed concern about maintaining access along the west side of US 27. Locating the L.A. line in the middle of the roadway is very unusual. If the destination for a significant volume of traffic using the US 27 interchange is local businesses, a very high volume of U-turns will result. It was also noted that U-turns need to accommodate trucks that are servicing the local businesses. This issue will be carefully evaluated during preliminary engineering.

11. FHWA is also very concerned about the slip ramp concept, with regard to the proposed locations identified in the Master Plan (that is, what was the reasoning behind locating slip ramps between certain interchanges), signing (is it possible to effectively sign for special purpose lanes and slip ramps such that the traveling public can understand), and safety/operations (slip ramp geometrics, plus traffic operations analyses for both the ramp terminal merge with the thru lane and for weaving between the slip ramp and the next interchange). This is especially a concern for Design Section 1, for which right-of-way acquisition is now underway. If an additional/auxiliary lane is required at the slip ramp, additional right-of-way will likely be required. Greg emphasized that resolution of this issue should be expedited. Sverdrup agreed to pursue as soon as possible.

12. Jeff Toussant discussed the status of FHWA review of the aesthetics guidelines. Jerry O'Steen (FDOT Structures Design Office, Tallahassee) transmitted the document to Reuben Plachy (FHWA), who has prepared draft comments. Jerry and Rubin are in the process of discussing/resolving the comments.

13. Don Graham presented the question of whether dry stormwater ponds could be allowed in the large infield areas at the US 27 interchange. Greg suggested that we submit a proposal describing the concept for FHWA approval, noting that it will be a dry pond (dry within 36 hours), no guardrail will be required, and the area will be landscaped. The proposed pond at the Memorial Boulevard interchange was also discussed, noting that Harry Rice had approved that location. Marvin asked for documentation about that proposed pond also. Sverdrup will provide.

14. Greg made a general statement about recent projects where the standard roadway soil survey did not provide enough information to accurately estimate the volume of muck removal. If appropriate, we may want to consider a more detailed soil survey to avoid this situation.

Marvin indicated that his next trip to the District will probably be in mid-September. He will confirm our next meeting time with John DeWinkler.

Agenda

Sverdrup
CORPORATION

I-4 WIDENING PROGRAM - DISTRICT ONE

FHWA COORDINATION MEETING
August 17, 1995 - 8:00 a.m.

1. **General**

PD&E and preliminary design proceeding concurrently.
No "design" submittals to FHWA prior to FHWA approval of environmental document.

No funding of R/W or construction at this time (except Section 1). Therefore, design contracts will be suspended after Phase II submittal, review, and resolution of comments.

2. **Master Plan and PD&E (Michael Baker, Jr., Inc.)**

Master Plan - approved by FHWA 2/17/95
IMR's - required for CR 582, CR 557, and US 27
CR 582 and CR 557 IMR's have been reviewed by FDOT committee. Revisions required.
US 27 IMR review by FDOT committee is scheduled for 8/23/95.
Submittal of all IMR's to FHWA expected late October.
PD&E -documentation of alternatives evaluation (matrix) in progress, including construction costs, R/W costs, and impacts
on-going coordination with design consultants
Public Involvement - workshops were held January 26 and 31.
Public hearing will be scheduled after IMR approvals.

3. **Design Current Status**

Section 1 -- Phase III submittal 6/1/95; construction 9/97
Section 2 -- Phase I submittal 4/18/95; Phase II submittal due 1/96
Section 3 -- Phase I submittal 3/30/95; Phase II submittal due 2/96
Section 4 -- Phase I submittal 6/19/95; Phase II submittal due 2/96
Section 5 -- Phase I submittal 5/26/95; Phase II submittal due 1/96
Section 6 -- Phase I submittal 7/3/95; Phase II submittal due 3/96
Section 7 -- Phase I submittal 4/14/95; Phase II submittal due 1/96
Section 8 -- Phase I submittal due 12/28/95; Phase II submittal due 5/96
Section 9 -- Phase I submittal due 3/8/96; Phase II submittal due 10/96

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4. Design Scope Reduction

Anticipated status of design elements at suspension of design projects:

roadway design and plans	Phase II level
traffic control design and plans	Phase II level
drainage design and plans	Phase II level
bridge and retaining wall design and plans	30% complete
geotechnical field and lab work and reports	100% complete except for high mast lighting, signs, and mitigation sites
value engineering	100% complete
signing and pavement markings design and plans	0% complete
master guide signing plan	0% complete
signalization design and plans	0% complete
lighting justification report	100% complete
roadway lighting design and plans	0% complete
utility coordination	30% plans coordination level only
landscaping design and plans	0% complete
wetland jurisdictional mapping	thru agency approval
wetland assessment report	100% complete
wetland avoidance/minimization documentation	100% complete
wetland resource/dredge & fill permit	0% complete
surface water/stormwater permit	0% complete except preliminary agency coordination
Stormwater Pollution Prevention Plan	0% complete
NPDES permit	0% complete
Wetland mitigation planning, design, and plans	20% complete (no additional work to be done after July 1995)
R/W mapping	30% complete

5. Access Management Issues

Design at interchanges will meet current access management criteria.

SR 559 (typical rural location)
US 98
US 27

6. Slip Ramps

More detailed evaluation of slip ramp concept is in progress.

Acknowledge that left-hand entrance from special purpose lane, through slip ramp, into third general purpose lane warrants careful design attention.

Preliminary analysis of highest volume slip ramp location indicates LOS "C" for slip ramp vehicles merging into general purpose lane.

Recommended geometrics are being revisited, to confirm optimum departure, cross-over, and entrance configuration. For example, 70:1 taper for entrance may be preferable rather than 50:1.

Also considering reduction of shoulder width to 1.8m (as is used for typical ramp shoulder), which would reduce length of opening in barrier wall, which would reduce opportunity for wrong way access into special use lanes.

During ultimate design, signing and pavement markings will require careful attention.

7. Aesthetics

Aesthetics Guidelines have been submitted to FHWA for approval. Status?

8. US 27 Stormwater Ponds

Consider stormwater ponds in infield of interchange.

√ XC: Project Book - Mtg Min

Minutes of Meeting

Sverdrup
CORPORATION

I-4 WIDENING PROGRAM - DISTRICT ONE
FHWA COORDINATION MEETING

DATE: February 12, 1996 - 9:00 a.m.

PARTICIPANTS:

Marvin Williams	FHWA
Gerry Carrigan	FDOT
Bernie Masing	FDOT
Charlie Morgan	FDOT
Marshall Dougherty	FDOT
Ed McGuire	Sverdrup
Bill Trefz	Sverdrup
Jeff Toussant	Sverdrup
Cheryl Jones	Sverdrup
Jack Montpetit	Sverdrup

The referenced meeting was held in Sverdrup's Bartow office. The meeting generally followed the attached agenda. Additional comments were as follows:

1. Charlie Morgan reported on his 2/8/96 field meeting with Maiser Khaled (FHWA). They visited some of the wetland areas adjacent to the project, especially in Section 6 (Green Swamp), which gave Maiser the opportunity to see the extent that the wetlands have already been impacted. A formal response from FHWA regarding the significance of the impacts is expected within the next week or two.

2. Marvin asked that we stagger the submittal of the Phase II design plans to facilitate his reviews.

3. The US 27 interchange was discussed at length. It was explained to Marvin that the four-level design is being revisited, primarily due to significant traffic operations concerns that result from the westbound to southbound fly-over ramp touching down in the median of US 27. The concept being considered now is a partial cloverleaf, similar to the existing interchange but design to today's standards and for a higher design speed. The PD&E consultant is in the progress of confirming that this concept will provide the required level of service. Once that analysis is complete a final recommendation for the concept will be made. Marvin stated that an amendment

- MORE -

Attachment

DISTRIBUTION: Participants
T.J. Martin (Michael Baker)
RGM

FILE: 07-002
38-009
08, 38-010

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to the Master Plan will be required to change the interchange concept. He will verify whether the amendment should be separate from the PD&E documents or whether they can be combined. He also expressed concern about the possibility that an amendment to the Master Plan might cause others at FHWA to take the opportunity to require a Major Investment Study.

4. The proposed pond at the Memorial Blvd. Interchange was discussed. Jack Montpetit pointed out that the terrain is very flat, pond will be well outside the clear zone, and the maximum water depth will be one foot, for only up to one hour. It was also mentioned that the area could be labeled as a "treatment swale" on the plans rather than a pond. Marvin stated that in addition to the safety concerns, FHWA does not like ponds within the L.A. R/W because they can become jurisdictional wetlands, which could limit what FHWA/FDOT are allowed to do within the right-of-way in the future. However, if there are no other alternatives, then they will have to live with it.

5. Gerry Carrigan advised Marvin that Marshall Dougherty is the new District Interstate Manager and is now his point of contact for this program.

6. The next FHWA coordination meeting was scheduled for 3/22/96, 9:00 a.m., in Sverdrup's office.

Agenda

Sverdrup
CORPORATION

I-4 WIDENING PROGRAM - DISTRICT ONE

FHWA COORDINATION MEETING
February 9, 1996 - 9:00 a.m.

1. **General**

PD&E and preliminary design proceeding concurrently.
No "design" submittals to FHWA prior to FHWA approval of environmental document.

No funding of construction at this time (except Section 1). Therefore, design contracts will be suspended after Phase II submittal, review, and resolution of comments.

2. **PD&E (Michael Baker, Jr., Inc.)**

IMR's - drafts have been prepared for CR 582, CR 557, and US 27.
Will not be finalized and submitted to FHWA at this time since none of the projects are in the current 10 year interstate work program; will be submitted when design resumes.

PD&E - 13 Point Review held 10/20/95.
Environmental Determination (508-01) submitted to FHWA 12/1/95.
Field review meeting held 2/8/96 to resolve concerns about the significance of the wetland impacts.
Draft Preliminary Engineering Report submitted 1/8/96; FDOT and GC review in progress.
Final environmental reports (air quality, noise, Wet II, etc.) due 2/9/96.
Threatened & Endangered Species Report being reviewed by USF&WS&W and FGFWFC (since 10/13/95)
Slip ramp analysis is in progress; resubmittal due 2/9/96. Analysis to date appears to support adding an acceleration lane where slip ramp traffic enters the general purpose lane. Suggest FDOT/FHWA meeting to review final recommendations when available (anticipate late February).

Public Involvement - workshops were held 1/26/95 and 1/31/95.
Public hearing will be scheduled after EA approval.

3. **Design Current Status**

Section 1 -- Phase III plans will be submitted to FHWA later this month; Phase IV submittal scheduled for 5/96; R/W acquisition is underway; construction letting 9/97
Section 2 -- Phase II submittal due 6/96
Section 3 -- Phase II submittal due 6/96
Section 4 -- Phase II submittal due 7/96
Section 5 -- Phase II submittal due 6/96

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Section 6 -- Phase II submittal due 8/96
Section 7 -- Phase II submittal due 6/96
Section 8 -- Phase I submittal due 2/96; Phase II submittal due 8/96
Section 9 -- Phase I submittal due 8/96; Phase II submittal due 3/97

4. **US 27 Interchange Concept**

Recently identified traffic operations concerns with fly-over ramp ending in US 27 southbound median.
Consultant is revisiting the fully directional, four-level interchange concept; expansion of exiting partial cloverleaf configuration may work.

5. **Proposed Pond at I-4/Memorial Blvd. Interchange**

Findings related to FHWA's concern about vehicles overturning into the pond

6. **Aesthetics**

Aesthetics Guidelines have been reviewed by FHWA.
Responses to FHWA comments have been prepared.
Revised Guidelines and responses to comments will be submitted to FHWA for approval this month.

xc: ~~JPT~~/~~JRS~~/~~EDM~~/Project Book. MHS Mon

Minutes of Meeting

Sverdrup
CORPORATION

RECEIVED
MAY 09 1996
MICHAEL BAKER JR., INC.
TAMPA, FL

I-4 WIDENING PROGRAM - DISTRICT ONE
FHWA COORDINATION MEETING
May 3, 1996 -- 8:30 a.m.

PARTICIPANTS:	Marvin Williams	FHWA
	Marshall Dougherty, Jr.	FDOT District 1
	Ray Moses	Sverdrup
	Cheryl Jones	Sverdrup

The referenced meeting was held in Sverdrup's Bartow office and generally followed the attached agenda. The following additional comments were made.

1. Coordination between FDOT Districts One and Five was discussed. District Five's draft master plan (along with the engineering concept report) was submitted to FHWA for review in late March. Comments were anticipated by late April. Marvin did not know the status of that review. It was discussed that there are currently some differences between the District Five draft master plan and the District One approved master plan. For example, District Five is proposing a typical section with only one HOV lane in each direction, whereas District One has proposed two in each direction. It was agreed that it does not make sense that different lane requirements are justified on each side of the Polk/Osceola County Line, since the traffic volumes at the CR 532 interchange are not significant. The proposed slip ramp design concept also differs between the two districts. Marvin agreed to check on the status of FHWA's review of the District Five master plan. He also recommended that District One (Marshall Dougherty or Charlie Morgan) request a meeting with District Five, District One, and FHWA to discuss and resolve the differences. Marshall will pursue.

2. Coordination between Districts One and Seven was also discussed. Cheryl ~~with~~ will check with District Seven to determine the status of their master plan and their proposed concept at the Polk County line.

3. The schedule for submittal of the Draft Environmental Assessment and the Draft Preliminary Engineering Report to FHWA is early June.

4. Marvin noted that FHWA now has a policy of a 10-day turn-around for reviews. If the review is not complete within 10 days, the submitter must be notified by phone.

- MORE -

Attachment

DISTRIBUTION: Participants
Charlie Morgan (FDOT District 1)
T.J. Martin (Michael Baker, Jr. Inc.)
JPT, JRM, EDM

FILE: 14, 15-001

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5. The schedule for submittal of the master plan amendments addressing the revised interchange concepts at US 27 and CR 582 to FHWA is by June 1.

6. Cheryl explained to Marvin the possibility of eliminating the proposed new WB Memorial Boulevard to EB I-4 on-ramp from the interchange concept is being investigated. This is due to high right-of-way costs (business damages) that will result from the limited access requirements associated with the new ramp. The traffic volumes for the new ramp are very low, and it appears that the ramp was only justified initially because the construction and right-of-way costs were anticipated to be very low. The investigation is still in progress, so no recommendation is available at this time. We will discuss this issue further with Marvin when the investigation is complete.

7. Cheryl explained to Marvin that the US 98 interchange is also being revisited, again due to extremely high right-of-way costs. The high costs will result from closure of driveways to businesses along US 98, immediately adjacent to the interchange. Various concepts are still being considered (including elimination of acceleration and deceleration lanes in some quadrants), and the associated design variances are being identified, so that the impacts of all alternatives will be clear before a decision is made. Again, the investigation is still in progress, and the issue will be discussed further with Marvin once the District's recommendation is available.

8. Marvin will check on the status of FHWA's review of the revised Aesthetics Guidelines.

9. Marvin noted that he will be on vacation from May 29 through June 9.

Agenda

Sverdrup
CORPORATION

I-4 WIDENING PROGRAM - DISTRICT ONE
FHWA COORDINATION MEETING
May 3, 1996 - 8:30 a.m.

1. **PD&E**

   A. Environmental Determination (508-01) signed by FHWA on 4/22/96.

   B. Draft Environmental Assessment and Draft Preliminary Engineering Report in progress.

   C. Final environmental reports completed 1/96.
   Responses to FHWA comments on wetland report transmitted on 4/22/96.
   Revised wetland report in progress.

   D. Threatened & Endangered Species Report: still waiting USF&WS approval (letter from FDOT sent to agencies to request expedited action)

   E. Slip ramps.
   FHWA has concurred with the configuration presented in Tallahassee on 4/11/96, except 50:1 taper should be increased to 70:1.
   Slip ramp configuration and recommended locations will be documented in engineering report.
   Signing for slip ramps also needs to be addressed in engineering report (no advance submittal to FHWA required).

   F. FHWA has concurred with revised interchange configurations at US 27 and CR 582 interchanges. Revised concepts will be addressed in master plan amendments, due May 17.

2. **Design Status**
   Supplemental agreements are being finalized for Sections 2 thru 8.
   Revised scope of services is being developed and negotiations are underway for Section 9 (US 27 interchange); significant renegotiations required due to changed interchange concept.

3. **Memorial Boulevard Interchange**
   Investigating the possibility of eliminating the proposed WB Memorial to EB I-4 ramp (new ramp), due to right-of-way impacts associated with limited access.

4. **US 98 Interchange**
   Investigating alternatives to reduce R/W impacts.

5. **Aesthetics**
   Status of FHWA review of revised Aesthetics Guidelines?

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Billy Wolfe

Minutes of Meeting

Sverdrup
CORPORATION

RECEIVED
FEB 07 1997
MICHAEL BAKER JR., INC.
TAMPA, FL

I-4 WIDENING PROGRAM - DISTRICT 1

COORDINATION WITH CITY OF LAKELAND PLANNING
February 4, 1997 -- 3:00 p.m.

SUBJECT: **City's Proposed Roadway Improvements in the vicinity of I-4/CR 542 Interchange**
582

PARTICIPANTS:

Pat Steed	City of Lakeland
Cheryl Jones CJ	Sverdrup

I met with Pat at her office to discuss the referenced interchange. I advised her that it has been determined that the interchange configuration previously identified for this location would not provide the required level of service for the design year traffic. As a result, a different alternative is being developed. I showed her the preliminary layout developed by the PD&E Team, indicating that some additional modifications are likely (e.g. the configuration of the CR 582/SR 33 intersection, number of lanes for the westbound ramps, etc.). Pat indicated that the previous concept (a more conventional diamond interchange) would be preferred, but she understood the traffic issue and the need to revisit the concept.

We discussed the fact that only one median opening is proposed on CR 582 between SR 33 and the westbound ramp terminals, which will result in a high volume of u-turns by traffic accessing local businesses. I asked Pat about the City's current plans for new streets in the area that might affect traffic patterns, to ensure that the new interchange does not preclude any planned projects.

Pat provided the attached "Exhibit A" which shows a proposed city street extending west from CR 582 at the location of the existing ramp terminals. The intersection with CR 582 would be signalized. The City and the developer of this area (bordered by CR 582, Fernery Road, Gibson Drive, and Arteva Drive) have reached agreement that the developer will donate the right-of-way and the City will construct the street (it is included in the City's work program). The City's design of the street is approximately 60% complete, but is on hold until the right-of-way is conveyed. The delay at this time is due to continuing negotiations between the developer and the various property owners. However, there apparently are no indications that the project will not eventually proceed.

The area has been rezoned commercial, so the residences currently using the Frontage Road will eventually be removed. Since the proposed commercial development will be served by the internal street system, the Frontage Road will no longer be needed.

- MORE -

Attachment

DISTRIBUTION: Marshall Dougherty, Bryan Williams, Ray Moses (FDOT)
T.J. Martin (Michael Baker)
Jimmy Gill (Greiner)
Jack Montpetit, Ed McGuire (Sverdrup)

FILE: 20-010
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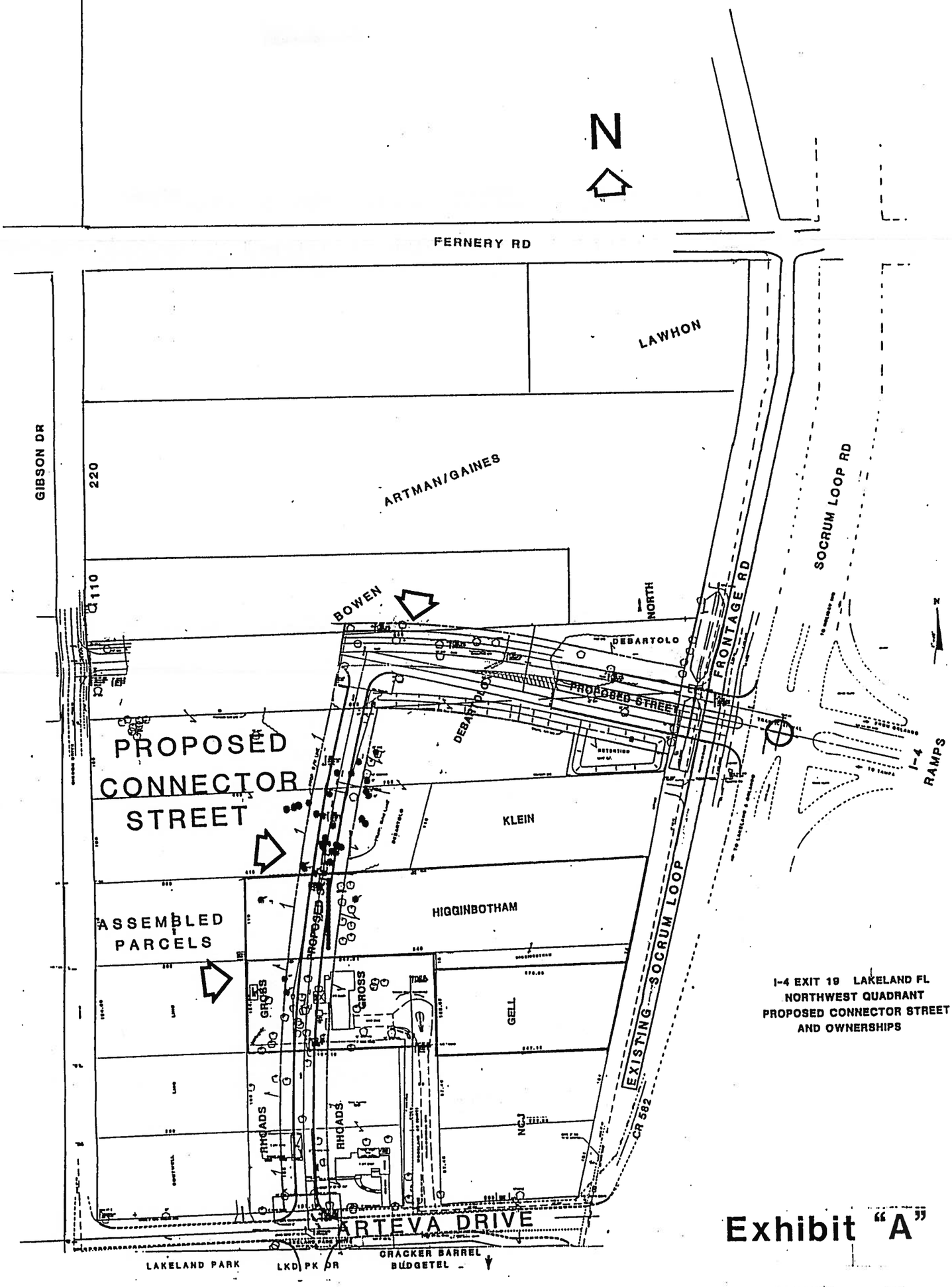
I told Pat that the I-4 project is still not funded for construction, so the schedule is uncertain. The current plan is for the design to be suspended at 60% until construction is funded. We agreed that it is likely that the City's project will be completed first (i.e. will be "existing" by the time the interstate design is complete).

We agreed that the addition of this street and the signalized intersection appears to work well with the new interchange concept and that this information should be provided to the District and the PD&E Team for consideration as the interchange concept is finalized.

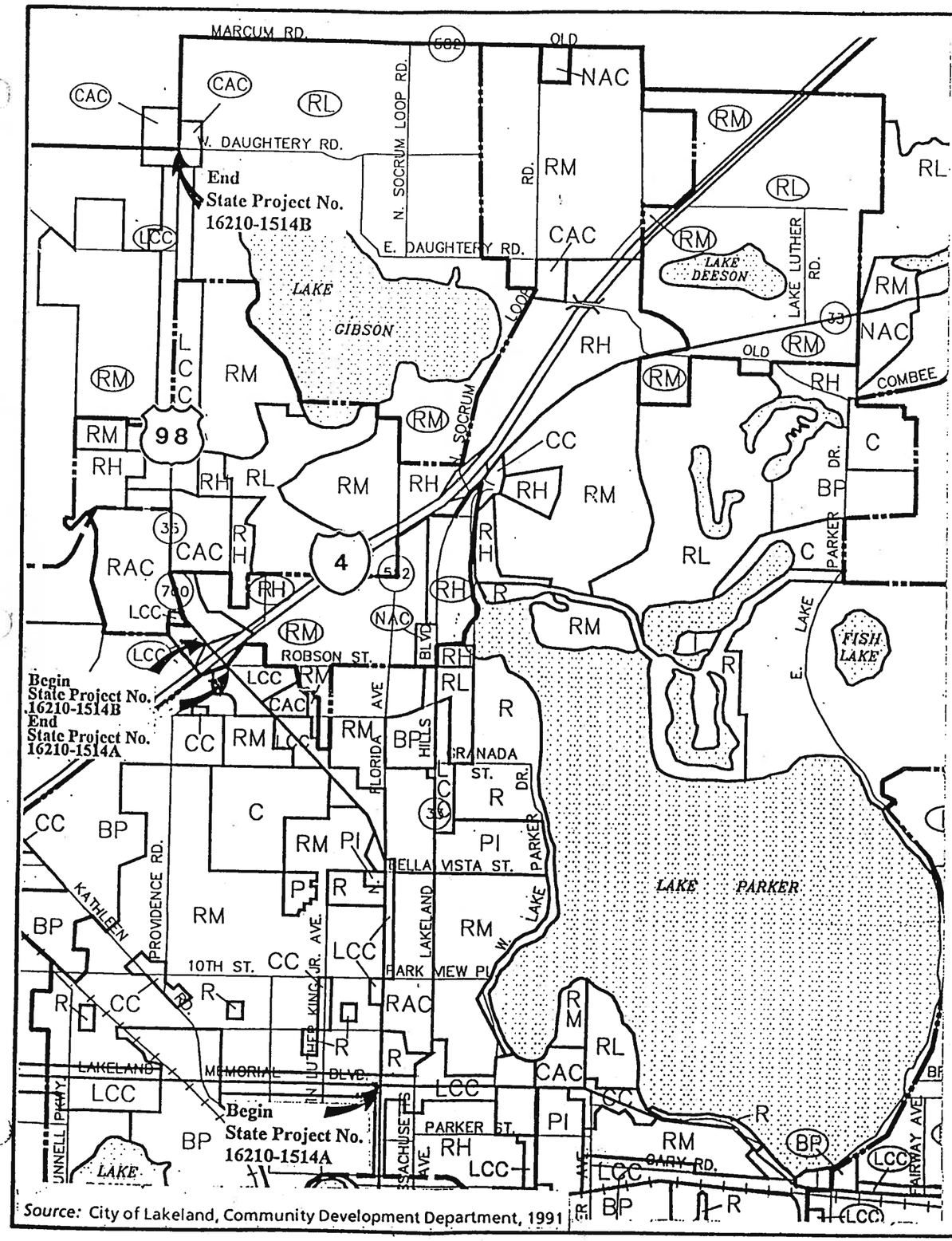
We also briefly discussed the SR 33/North Florida Avenue intersection. I pointed out that elimination of the left turn out of North Florida is being considered. Pat acknowledged that the current intersection is a safety concern and that it is too close to the CR 582 intersection to be signalized. The City has no current plans to construct a new, more direct connection between SR 33 and Carpenter's Way Road, although a connection from Cartpenter's Way to SR 33 at the proposed entrance to the Bridgewater DRI would be logical.

I told Pat that we will keep her apprised as the interchange configuration is finalized.



I-4 EXIT 19 LAKELAND FL
NORTHWEST QUADRANT
PROPOSED CONNECTOR STREET
AND OWNERSHIPS

Exhibit "A"



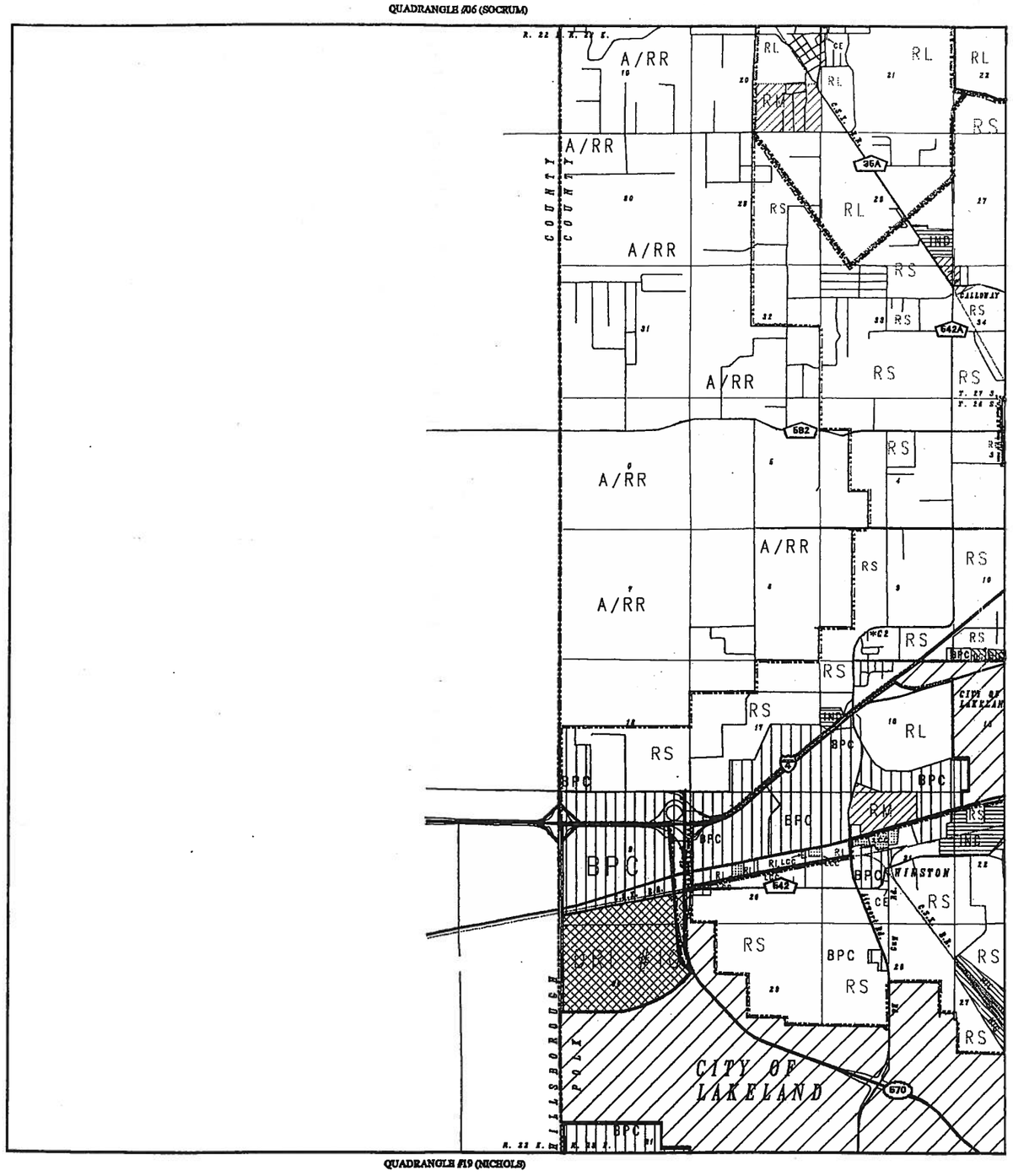
LEGEND

RAC	REGIONAL ACTIVITY CENTER
CAC	COMMUNITY ACTIVITY CENTER
NAC	NEIGHBORHOOD ACTIVITY CENTER
LCC	LINEAR COMMERCIAL CORRIDOR
CC	CONVENIENCE CENTER
BP	BUSINESS PARK
I	INDUSTRIAL
RH	RESIDENTIAL HIGH
RM	RESIDENTIAL MEDIUM
RL	RESIDENTIAL LOW
PI	PUBLIC AND INSTITUTIONAL
R	RECREATION
C	CONSERVATION
P	PRESERVATION
———	URBAN DEVELOPMENT AREA BOUNDARY
—··—··—	1990 CORPORATE BOUNDARY
·····	FUTURE ROADS
(RL)	Suggested compatible land use contiguous to 1990 corporate boundary
(···)	LAKES

Lakeland Year 2000 Land Use Plan
Interstate 4
from West of Memorial Boulevard
to the Polk/Osceola County Line
State Project Number: 16320-1402
Work Program Item Number: 1147948
Federal-Aid Project Number: ACDH-4-1(130)25

QUADRANGLE # 12
PLANT CITY EAST, FLA.

2010 FUTURE LAND USE



LEGEND

DEVELOPMENT-AREA BOUNDARIES

- Urban-Development Areas (UDA) (Public Water & Sewer--Existing and Proposed within 5 years)
- Urban-Growth Areas (UGA) (Public Water & Sewer Proposed within 6-10 years)
- Suburban-Development Areas (SDA) (Non-Sewered)
- Utility-Enclave Areas (UEA) (Isolated Existing Sewered Areas)

LAND-USE CATEGORIES

- RCC – Rural-Cluster Center
- CC – Convenience Center
- NAC – Neighborhood Activity Center
- CAC – Community Activity Center
- RAC – Regional Activity Center
- HIC – High-Impact Commercial Center
- TCC – Tourism Commercial Center
- BPC – Business Park Center
- TC – Town Center
- CORE – CARMP Core
- LCC – Linear Commercial Corridor
- EC – Employment Center
- CE – Commercial Enclave
- IND – Industrial
- PM – Phosphate Mining
- L/R – Leisure/Recreation
- INST – Institutional
- ROS – Recreation and Open Space
- PRESV – Preservation
- RS – Residential-Suburban
- RL – Residential-Low (Up to 5.00 DU/AC)
- RM – Residential-Medium (Up to 10.00 DU/AC)
- RH – Residential-High (Up to 15.00 DU/AC)
- A/RR – Agriculture/Residential-Rural
- DRI – Development of Regional Impact
- PRE-DRI – DRI Scale Projects
- SPA – Ridge Special Protection Area
- SPA – Rural Special Protection Area
- SPA – Polk City Special Protection Area
- SAP – Selected-Area Plan
- X – Indicates Extra Dev. Std's (see text)

GENERAL LEGEND

- Incorporated Area
- Interstate Highway
- U.S. Highway
- State Highway
- County Roads
- Paved County Roads
- Polk County Boundary
- Green Swamp Area of Critical State Concern Boundary
- Proposed Transportation Linkages
- Railroad Lines
- Section Lines
- 24 Section Numbers
- Airport Runways
- Lakes/Water
- Proposed Interchanges
- * County Recreation Areas

2,000 0 1 MILE
1,000 SCALE 1:63,360

PREPARED BY THE
POLK COUNTY
BOARD OF COUNTY COMMISSIONERS
PLANNING DIVISION
PLOTDATE: FEBRUARY 12, 1998

THIS IS ONE OF THE "POLK COUNTY FUTURE LAND USE MAP SERIES" IT MUST BE INTERPRETED IN CONJUNCTION WITH OTHER MAPS OF THE SERIES, AND THE OBJECTIVES AND POLICIES OF THE "POLK COUNTY COMPREHENSIVE PLAN" – SPECIFICALLY THE "FUTURE LAND USE ELEMENT".

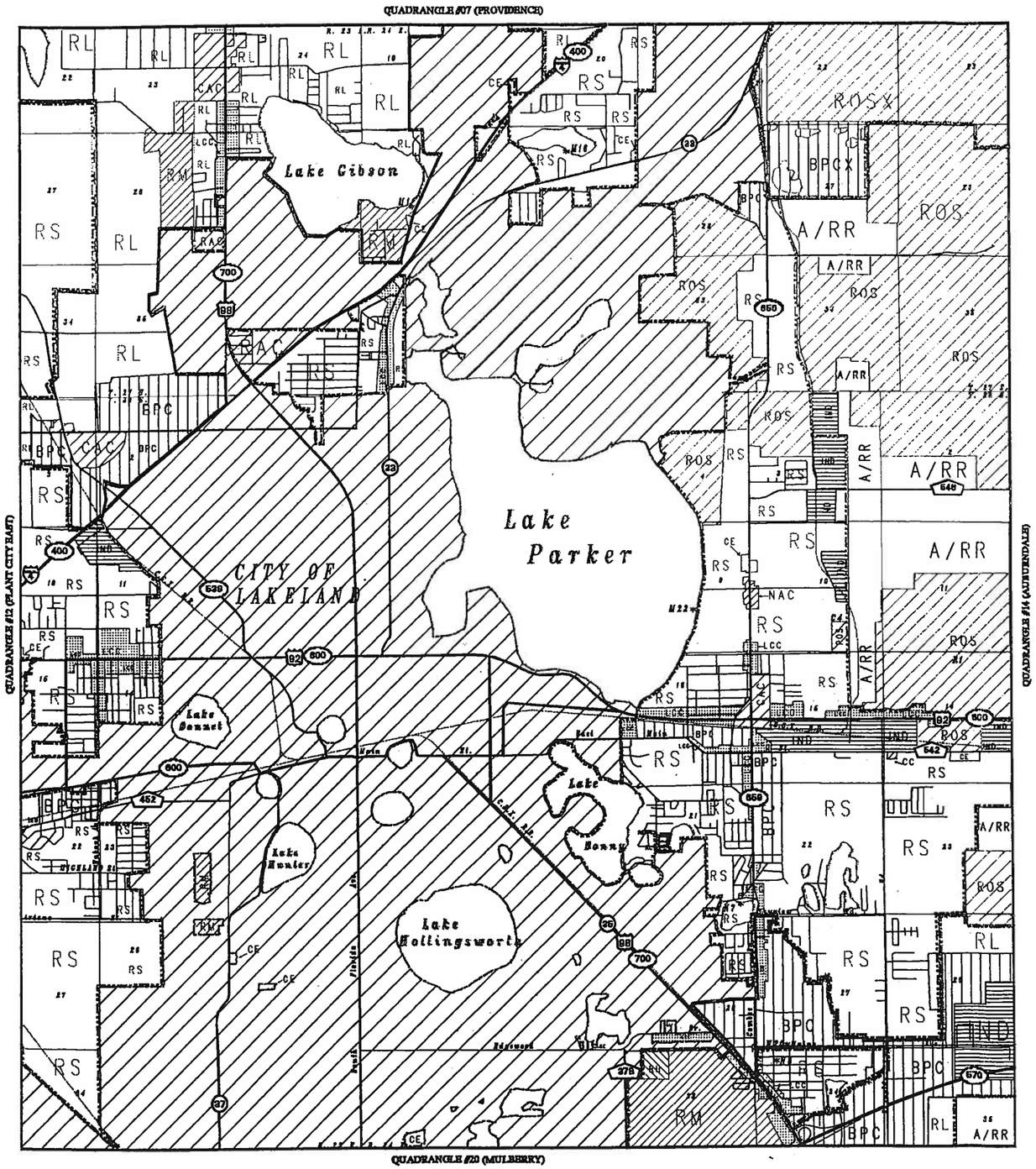
REVISIONS

NO.	DESCRIPTION	DATE
93A-02	154 ACS FROM RS TO BPC & LCC, US 92/COUNTY LINE RD., 20 & 21-28-23	25 MAY 93
93B-01	70 ACS FROM RS TO BPC, COUNTY LINE & SWINDELL RD, 18-28-23	31 JAN 94
93B-19	750 ACS FROM SDA TO UDA, COUNTY LINE ROAD/S OF I-4, 19 & 30-28-23	31 JAN 94
94S-03	2.03 ACS FROM BPC TO CE, EAST OF CR 542, 21-26-23	30 AUG 94
95A-01	1,015 ACS FROM SDA TO UDA,125 ACS FROM RS TO RL, 3,16,17,20,21,-28 -23, 27,28,33-28 -24.	17 OCT 95
96A-12	DEVELOPMENT AREA CHANGE	19 DEC 96
98S-04	6.12 ACS OF BPC TO HIC AT 3225 S WINDELL RD. E OF CRUTCHFIELD RD., 10-28-23	17 FEB 98

POLK COUNTY, FLORIDA
COMPREHENSIVE PLAN
GENERALIZED
2010 FUTURE LAND USE
NOVEMBER 18, 1992
QUADRANGLE # 12
PLANT CITY EAST, FLA.

QUADRANGLE # 13
LAKELAND, FLA.

2010 FUTURE LAND USE



LEGEND

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- State Highway
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- Section Lines
- 24 Section Numbers
- Airport Runways
- Lakes/Water
- Proposed Interchanges
- * County Recreation Areas

2,000 0 1 MILE
1,000 SCALE 1:63,360

PREPARED BY THE
POLK COUNTY
BOARD OF COUNTY COMMISSIONERS
PLANNING DIVISION
PLOT DATE: FEBRUARY 12, 1998

THIS IS ONE OF THE "POLK COUNTY FUTURE LAND USE MAP SERIES" IT MUST BE INTERPRETED IN CONJUNCTION WITH OTHER MAPS OF THE SERIES, AND THE OBJECTIVES AND POLICIES OF THE "POLK COUNTY COMPREHENSIVE PLAN" -- SPECIFICALLY THE "FUTURE LAND USE ELEMENT".

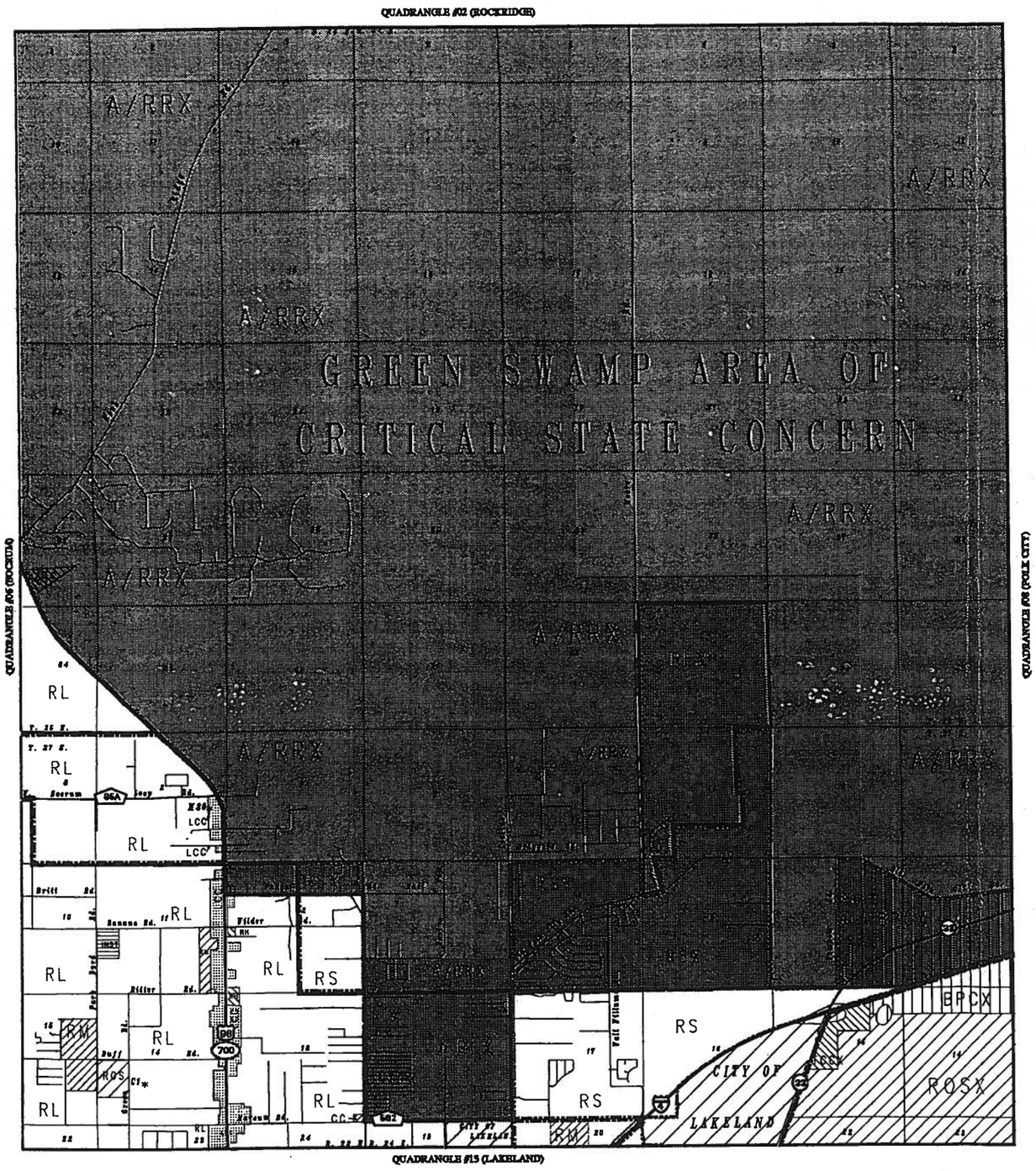
REVISIONS

NO.	DESCRIPTION	DATE
93A-06	5 ACS FROM CITY TO CE, EDGEWOOD DR. 29-28-24	25 MAY 93
93A-08	1 ACRE FROM RL TO LCC, US 98/ GIB-GALLOWAY, 23-27-23	25 MAY 93
93B-02	4 ACS FROM RS/SDA TO INST/UDA, 7 ACS FROM RS/SDA TO RL/UDA, LONGFELLOW BLVD, 21-28-24	31 JAN 94
93B-09	160 ACS FROM BPC TO IND, MAINE AVE, 26 & 35-28-24	31 JAN 94
94A-13	8 ACS FROM RS TO LCC, US 92 & N CHESTNUT RD, 10-28-23	04 OCT 94
94A-16	3 ACS FROM RS TO CE, E OF COMBEE RD, 10-28-23	04 OCT 94
95A-01	1015 ACS FROM SDA TO UDA, 125 ACS FROM RS TO RL. 3, 16, 17, 20, 21 -28 -23, 27, 28, 33-28-24.	17 OCT 95
95S-13	2 ACS FROM RS TO CE, N SIDE OF SR 33, 29-27-24.	05 DEC 95
96S-11	8.99 ACS FROM IND TO LCC, NE COR OF CR 542 & SR 33A, 15-28-24	15 OCT 96
96A-12	DEVELOPMENT AREA CHANGE	19 DEC 96
97S-22	0.517 ACS FROM RS TO LCC, SE COR OF E. MAIN ST. & UTAH AVE., 16-28-24	02 DEC 97
97S-23	10 ACS FROM RL TO LCC, W OF SW COR OF MARCUM RD. & US HWY 98, 23-27-23	02 DEC 97
98S-02	0.85 ACS OF RS TO LCC, W SIDE OF S. COMBEE RD. S OF E. CIVITAN AVE., 28-28-24	17 FEB 98
98S-08	10 ACS RS TO IND, N OF WEST 10TH ST., W OF THE RAILROAD & S OF FAIRBANKS ST., 11-28-23	17 FEB 98
98S-09	1.07 ACS RM TO CE, INT. OF LK GIBSON PARK RD. & SR 582, SE OF LK GIBSON, 30-27-24	17 FEB 98

POLK COUNTY, FLORIDA
COMPREHENSIVE PLAN
GENERALIZED
2010 FUTURE LAND USE
NOVEMBER 18, 1992
QUADRANGLE # 13
LAKELAND, FLA.

QUADRANGLE # 07
PROVIDENCE, FLA.

2010 FUTURE LAND USE



LEGEND

DEVELOPMENT-AREA BOUNDARIES

- Urban-Development Areas (UDA) (Public Water & Sewer--Existing and Proposed within 5 years)
- Urban-Growth Areas (UGA) (Public Water & Sewer Proposed within 6-10 years)
- Suburban-Development Areas (SDA) (Non-Sewered)
- Utility-Enclave Areas (UEA) (Isolated Existing Sewered Areas)

LAND-USE CATEGORIES

RCC	–	Rural-Cluster Center
CC	–	Convenience Center
NAC	–	Neighborhood Activity Center
CAC	–	Community Activity Center
RAC	–	Regional Activity Center
HIC	–	High-Impact Commercial Center
TCC	–	Tourism Commercial Center
BPC	–	Business Park Center
TC	–	Town Center
CORE	–	CARMP Core
LCC	–	Linear Commercial Corridor
EC	–	Employment Center
CE	–	Commercial Enclave
IND	–	Industrial
PM	–	Phosphate Mining
L/R	–	Leisure/Recreation
INST	–	Institutional
ROS	–	Recreation and Open Space
PRESV	–	Preservation
RS	–	Residential-Suburban
RL	–	Residential-Low (Up to 5.00 DU/AC)
RM	–	Residential-Medium (Up to 10.00 DU/AC)
RH	–	Residential-High (Up to 15.00 DU/AC)
A/RR	–	Agriculture/Residential-Rural
DRI	–	Development of Regional Impact
PRE-DRI	–	DRI Scale Projects
SPA	–	Ridge Special Protection Area
SPA	–	Rural Special Protection Area
SPA	–	Polk City Special Protection Area
SAP	–	Selected-Area Plan
X	–	Indicates Extra Dev. Std's (see text)

GENERAL LEGEND

- Incorporated Area
- Interstate Highway
- U.S. Highway
- State Highway
- County Roads
- Paved County Roads
- Polk County Boundary
- Green Swamp Area of Critical State Concern Boundary
- Proposed Transportation Linkages
- Railroad Lines
- Section Lines
- 24 Section Numbers
- Airport Runways
- Lakes/Water
- Proposed Interchanges
- * County Recreation Areas

2,000 0 1 MILE
1,000 SCALE 1:63,360

PREPARED BY THE
POLK COUNTY
BOARD OF COUNTY COMMISSIONERS
PLANNING DIVISION
PLOTDATE: NOVEMBER 16, 1992

THIS IS ONE OF THE "POLK COUNTY FUTURE LAND USE MAP SERIES" IT MUST BE INTERPRETED IN CONJUNCTION WITH OTHER MAPS OF THE SERIES, AND THE OBJECTIVES AND POLICIES OF THE "POLK COUNTY COMPREHENSIVE PLAN" -- SPECIFICALLY THE "FUTURE LAND USE ELEMENT".

REVISIONS

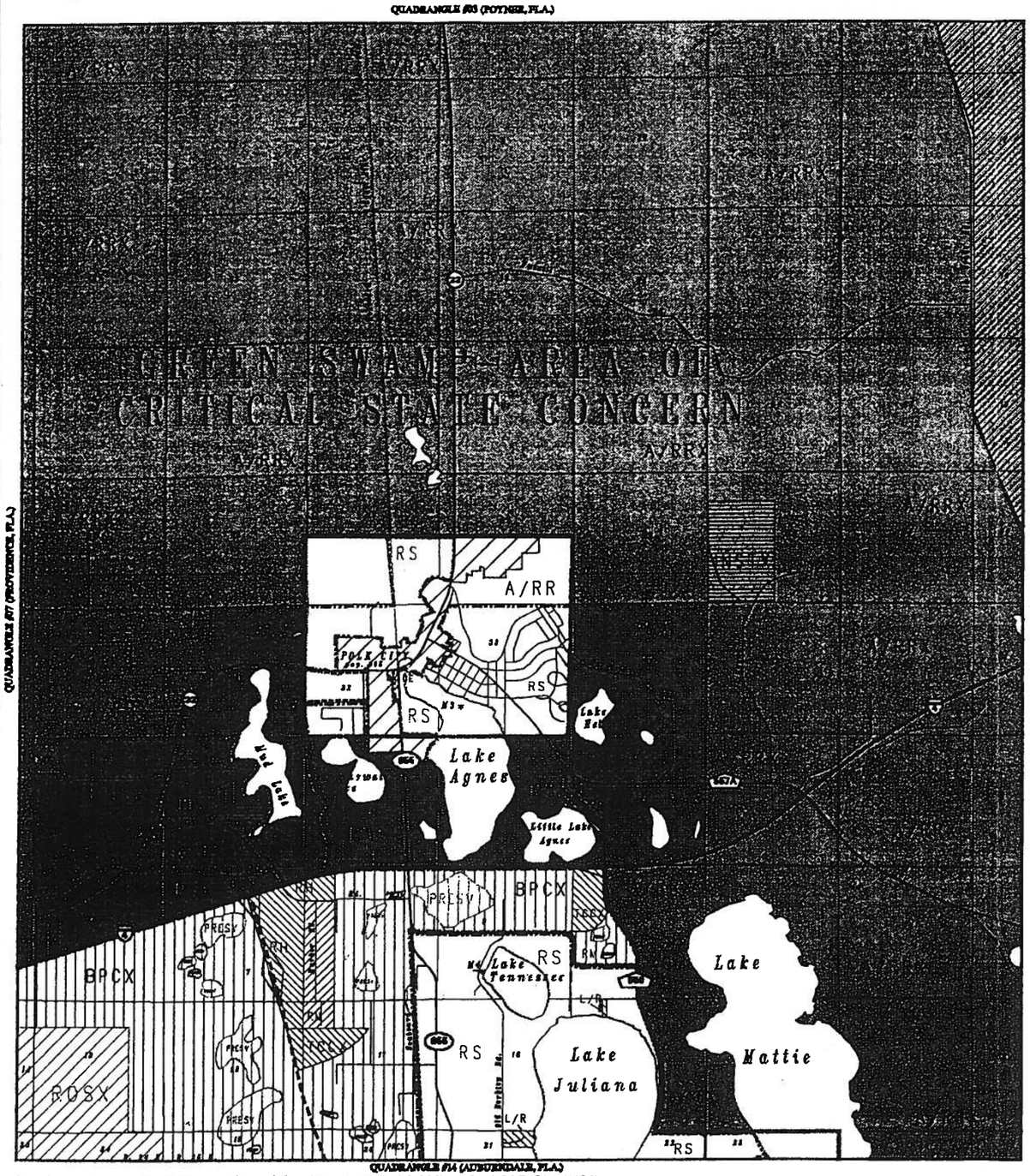
NO.	DESCRIPTION	DATE
93B-10	10 ACS FROM INST, CE & RL TO LCC, US 98/CR 35-A, 2-27-23	31 JAN 94
93B-16	86 ACS FROM RM TO RL, 18-27-24, SPAs included in CARMP	31 JAN 94
95A-17	2,660 ACS FROM UGA/RL TO UDA/RL & SDA/RS, N LAKELAND. 4, 8, 9, 15, 16, 17 -27 -24.	17 OCT 95
96A-12	DEVELOPMENT AREA CHANGE	19 DEC 96
97S-15	2.94 ACS FROM RL TO CC, NW COR OF MARCUM RD & SOCRUM LOOP RD, 13-27-23	17 JUN 97
97S-23	10 ACS FROM RL TO LCC, W OF SW COR OF MARCUM RD. & US HWY 98, 23-27-23	02 DEC 97

POLK COUNTY, FLORIDA
COMPREHENSIVE PLAN
GENERALIZED
2010 FUTURE LAND USE
NOVEMBER 18, 1992
QUADRANGLE # 07
PROVIDENCE, FLA.

QUADRANGLE #08
POLK CITY, FLA.

2010 FUTURE LAND USE

POLK COUNTY, FLORIDA



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LAND-USE CATEGORIES

Activity Centers

- RCC -- Rural-Cluster Center
- CC -- Convenience Center
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- RAC -- Regional Activity Center
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- TCC -- Tourism Commercial Center
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- LCC -- Linear Commercial Corridor
- CE -- Commercial Enclave
- IND -- Industrial
- PM -- Phosphate Mining
- L/R -- Leisure/Recreation
- INST -- Institutional
- ROS -- Recreation and Open Space
- PRESV -- Preservation

RESIDENTIAL LAND USES

- RS -- Residential-Suburban
- RL -- Residential-Low (Up to 5.00 DU/AC)
- RM -- Residential-Medium (Up to 10.00 DU/AC)
- RH -- Residential-High (Up to 15.00 DU/AC)
- A/RR -- Agriculture/Residential-Rural
- DRI -- Development of Regional Impact
- PRE-DRI -- DRI Scale Projects
- SPA -- Ridge Special Protection Area
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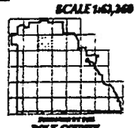


PREPARED BY THE
POLK COUNTY
BOARD OF COUNTY COMMISSIONERS
PLANNING DIVISION
PLANNED: NOVEMBER 18, 1992
SOURCE: POLK COUNTY PLANNING DIVISION

REVISIONS

NO.	DESCRIPTION	DATE
93B-16	SPAs included in CARMP	31 JAN 94
96A-18	233.8 ACRES FROM SDA/RSX TO RDA/I A/RRX, BETTWEEN LAKES JULIANNA AND MATTIE, 14 & 15 -27-25	03 DEC 96

COMPREHENSIVE PLAN

POLK COUNTY, FLORIDA
NOVEMBER 18, 1992

GENERALIZED

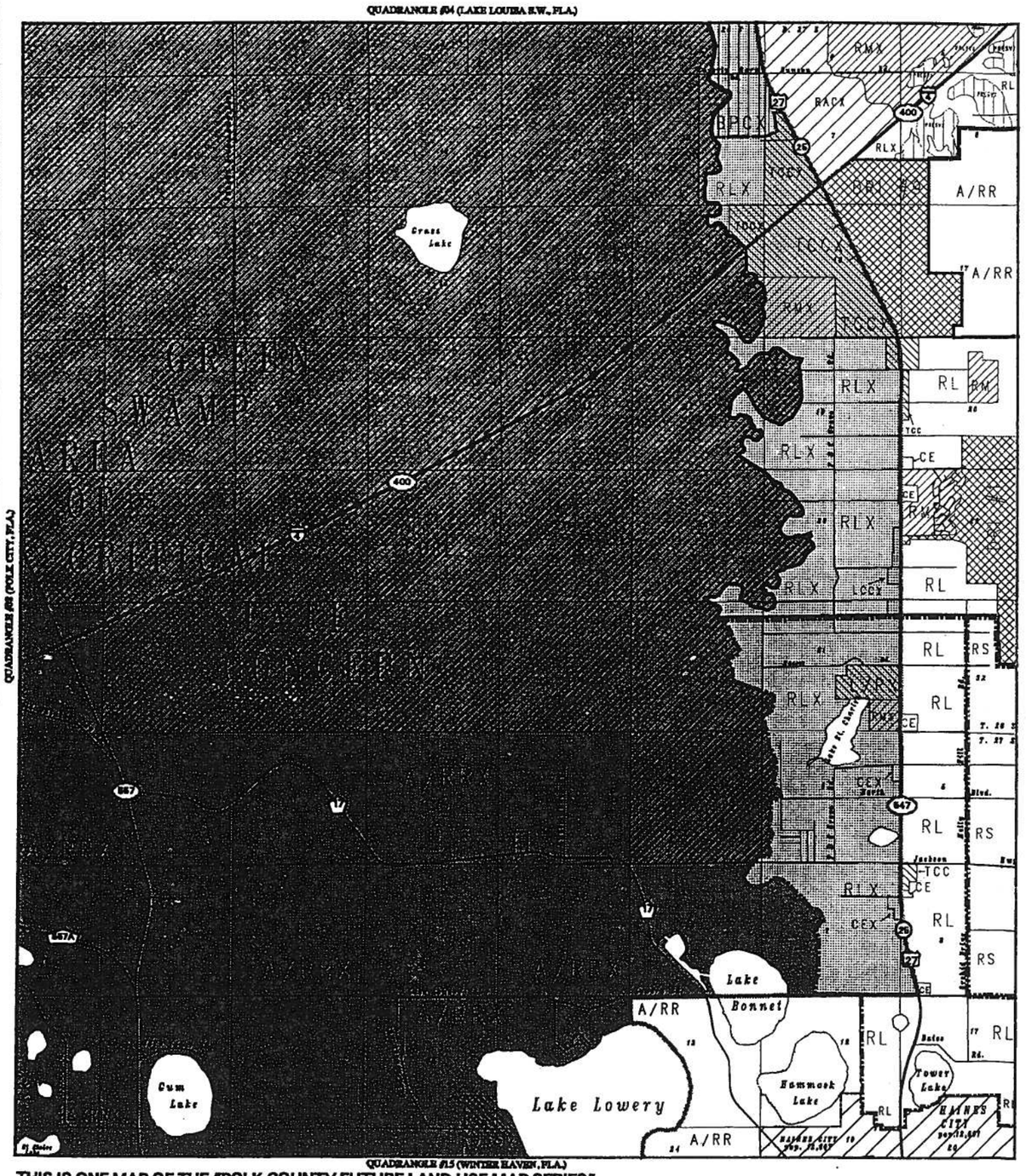
FUTURE LAND USE

QUADRANGLE #08
POLK CITY, FLA.

QUADRANGLE #09
GUM LAKE, FLA.

2010 FUTURE LAND USE

POLK COUNTY, FLORIDA



LEGEND

DEVELOPMENT-AREA BOUNDARIES

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LAND-USE CATEGORIES

- RCC ... Rural-Cluster Center
- CC ... Convenience Center
- NAC ... Neighborhood Activity Center
- CAC ... Community Activity Center
- RAC ... Regional Activity Center
- HIC ... High-Impact Commercial Center
- TCC ... Tourism Commercial Center
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- TC ... Town Center
- CORE ... CARMP Core
- LCC ... Linear Commercial Corridor
- EC ... Employment Center
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- L/R ... Leisure/Recreation
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- A/RR ... Agriculture/Residential-Rural
- DRI ... Development of Regional Impact
- PRE-DRI ... DRI Scale Projects
- SPA ... Ridge Special Protection Area
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- SPA ... Polk City Special Protection Area
- SAP ... Selected-Area Plan
- X ... Indicates Extra Dev. Std's (see text)

GENERAL LEGEND

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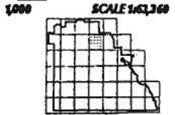
2,000 0 1 MILE
1,000 SCALE 1:63,360



PREPARED BY THE POLK COUNTY BOARD OF COUNTY COMMISSIONERS PLANNING DIVISION FLORIDA March 07, 1997
SOURCE: POLK COUNTY PLANNING DIVISION

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REVISIONS

Exhibit "A"

NO.	DESCRIPTION	DATE
93A-10	2 ACRES FROM RL TO LCC, US27/I-4, 30-36-27	25 MAY 93
93B-16	REMOVE FAC, I-4/SR 557, 31-26-26 REMOVE 179 ACRES FROM TCC TO RL, US27/I-4 19,20-26-27, SPAs included in CARMP	31 JAN 94
94S-06	10.0 ACRES FROM RL TO TCC, US 27 & CR 547, 8-27-27	30 AUG 94
94A-12	Correct Land-Use Development -Area Boundaries to be Consistent With the Critical Area Resource Management Plan (CARMP) Map	04 OCT 94
95S-05	8.4 ACRES FROM RL TO TCC, 20-26-27	16 MAY 95
95S-06	7.5 ACRES FROM RL TO CE, 32-26-27	16 MAY 95
96A-12	DEVELOPMENT AREA CHANGE	19 DEC 96
97S-06	8 ACRES FROM RM TO CE, E SIDE OF US 27, 29-26-27	18 MAR 97

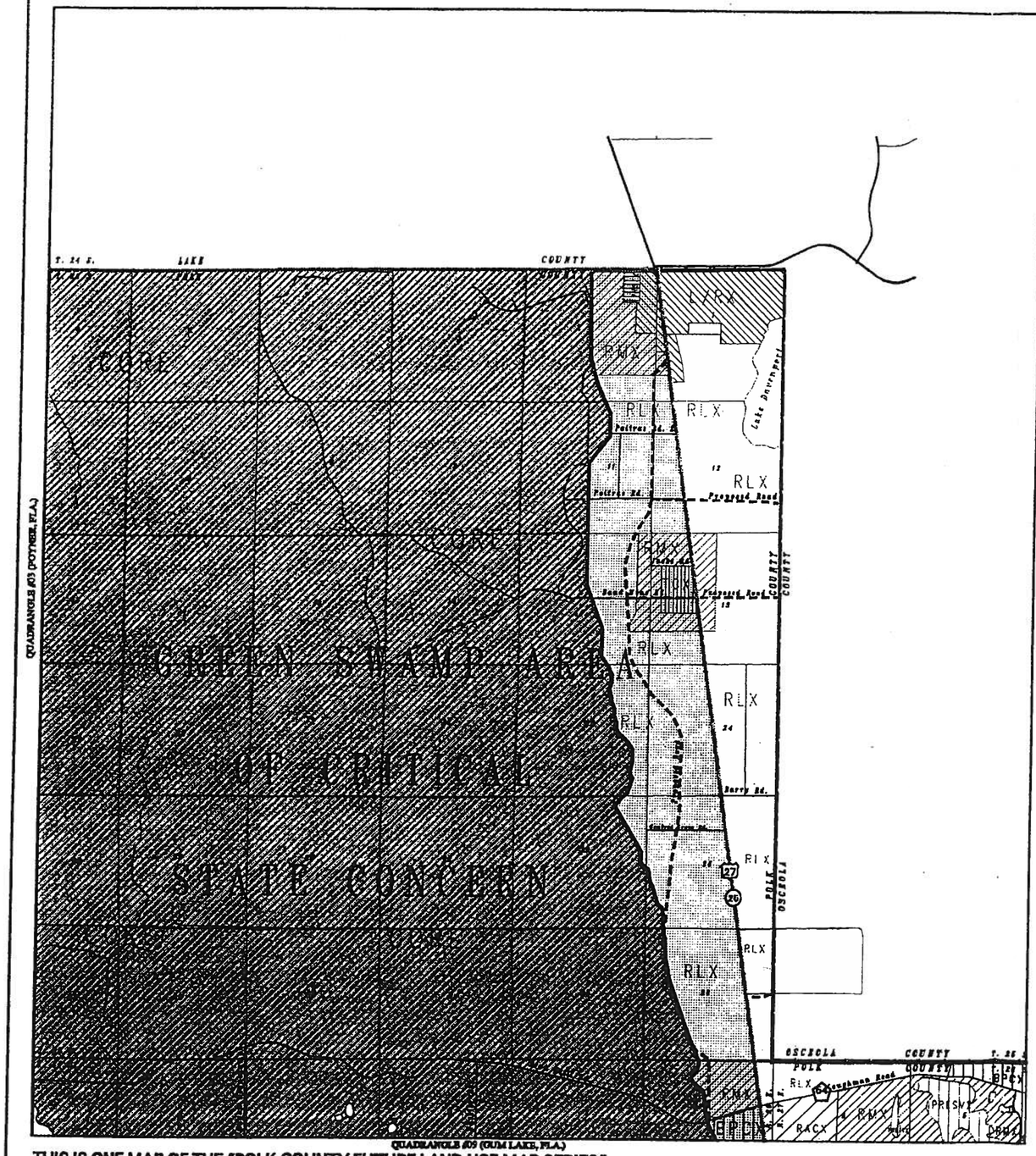
COMPREHENSIVE PLAN

POLK COUNTY, FLORIDA
NOVEMBER 18, 1992

GENERALIZED
FUTURE LAND USE

QUADRANGLE #09
GUM LAKE, FLA.

QUADRANGLE #04
LAKE LOUISA S.W., FLA.



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2010 FUTURE LAND USE

POLK COUNTY, FLORIDA

LEGEND

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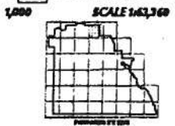


PREPARED BY THE
POLK COUNTY
BOARD OF COUNTY COMMISSIONERS
PLANNING DIVISION
FLORIDA: DECEMBER 18, 1992
SOURCE: POLK COUNTY PLANNING DIVISION

REVISIONS

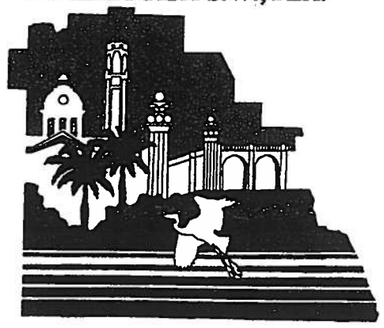
NO.	DESCRIPTION	DATE
93B-16	SPAs included in CARMP	31 JAN 94
94A-12	Correct Land-Use Development -Area Boundaries to be Consistent With the Critical Area Resource Management Plan (CARMP) Map	04 OCT 94
96A-09	MODIFICATION OF US HWY 27 SAP PROPOSED ROAD NETWORK.	03 DEC 96
96A-12	DEVELOPMENT AREA CHANGE	19 DEC 96

COMPREHENSIVE PLAN

POLK COUNTY, FLORIDA
NOVEMBER 18, 1992

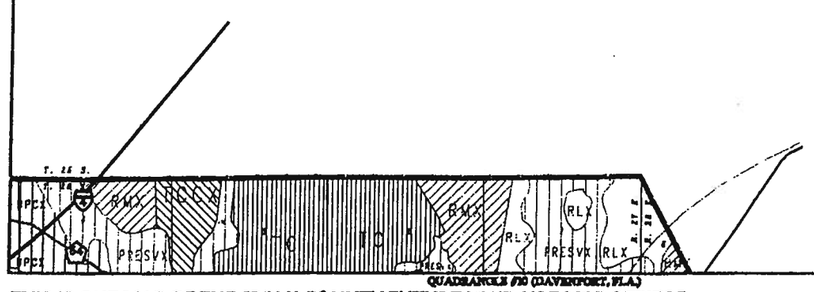
GENERALIZED FUTURE LAND USE

QUADRANGLE #04
LAKE LOUISA S.W., FLA.



QUADRANGLE #05
INTERCESSION CITY, FLA.

QUADRANGLE #04 (LAKE LOUISA S.W., FLA.)



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2010 FUTURE LAND USE

POLK COUNTY, FLORIDA

LEGEND

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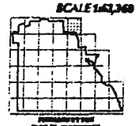


PREPARED BY
POLK COUNTY
BOARD OF COUNTY COMMISSIONERS
PLANNING DIVISION
FLORIDA DECEMBER 17, 1992
SOURCE: POLK COUNTY PLANNING DIVISION

REVISIONS

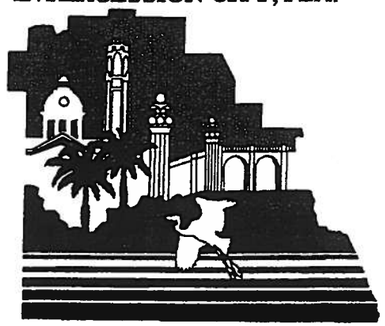
NO.	DESCRIPTION	DAT
96A-12	DEVELOPMENT AREA CHANGE	19 DEC

COMPREHENSIVE PLA

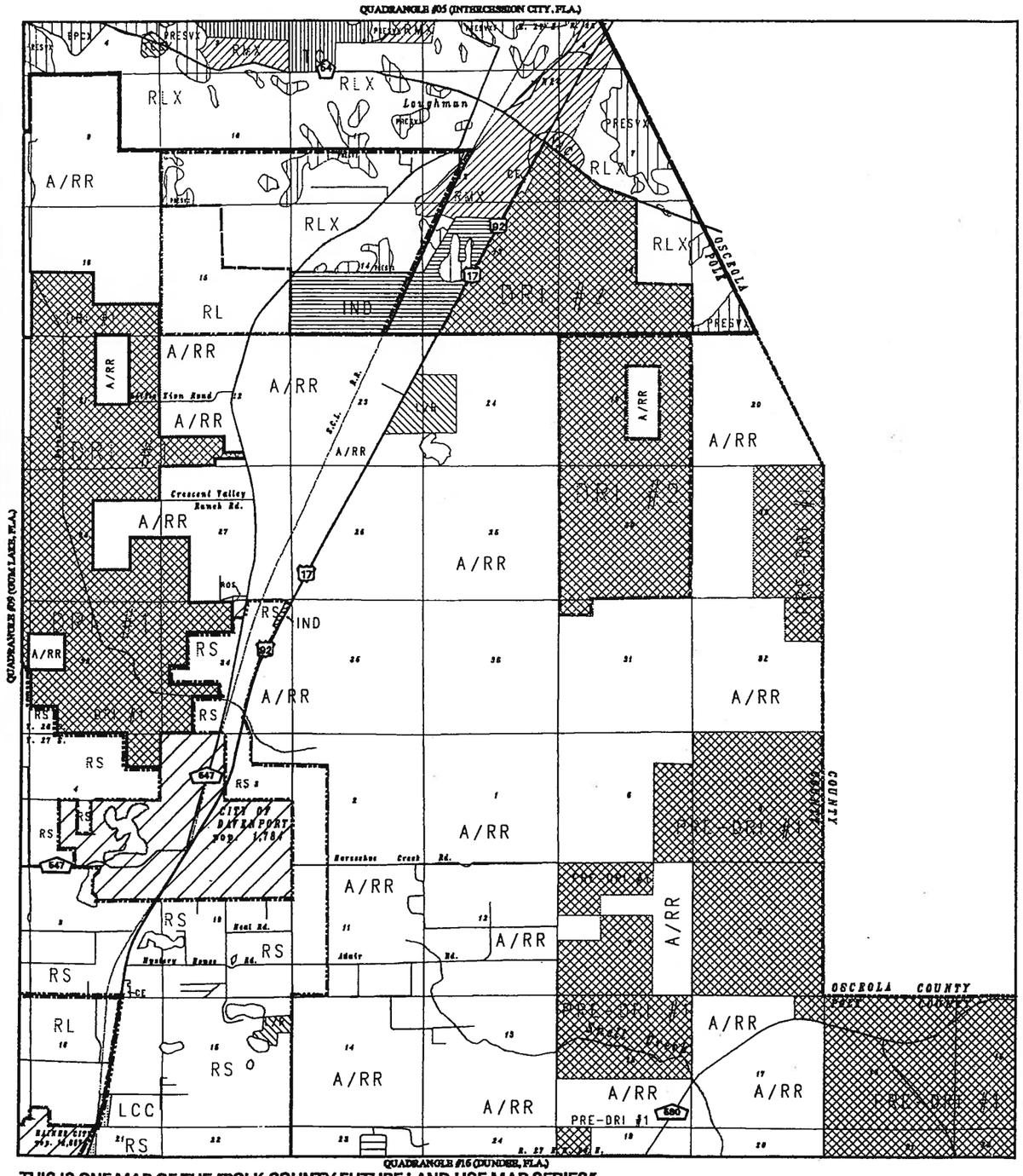
POLK COUNTY, FLORIDA
NOVEMBER 18, 1992

GENERALIZED
FUTURE LAND USE

QUADRANGLE #05
INTERCESSION CITY, FLA.



QUADRANGLE #10
DAVENPORT, FLA.



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POLK COUNTY, FLORIDA

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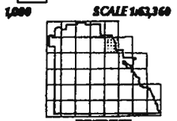


PREPARED BY THE
POLK COUNTY
BOARD OF COUNTY COMMISSIONERS
PLANNING DIVISION
PLOTTED: DECEMBER 27, 2006
SOURCE: POLK COUNTY PLANNING DIVISION

REVISIONS

NO.	DESCRIPTION	DATE
94A-19	5 ACRES FROM RS TO IND, WEST SIDE OF US 17/92, 34-26-27	04 OCT 94
96S-05	5.8 ACRES FROM DRI #2 TO CE, EAST SIDE U.S. 17/92. 12-26-27	19 MAR 96
96S-18	2.75 ACRES FROM RS TO CE, EAST SIDE OF US 17/92, IN SE CORNER OF 9-27-27	19 NOV 96
96A-12	DEVELOPMENT AREA CHANGE	19 DEC 96
96B-12	20 ACRES FROM A/RR TO DRI #2, E OF US 17/92, 31-26-28.	19 DEC 96

COMPREHENSIVE PLAN

POLK COUNTY, FLORIDA
NOVEMBER 18, 1992

GENERALIZED
FUTURE LAND USE

QUADRANGLE #10
DAVENPORT, FLA.

Appendix D
SHPO Letter of No-Effect

Project Book - Cultural Resources
for XC: Joan Demuny - ACI
Roger Menendez - PBSJ
ATTN - Nikki Whitaker

Kim

FLORIDA DEPARTMENT OF STATE
Sandra B. Mortham
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Director's Office (904) 488-1480
Telecopier Number (FAX) (904) 488-3353

August 2, 1995

Mr. J. R. Skinner
Division of Administration
Federal Highway Administration
U.S. Department of Transportation
227 N. Bronough Street, Room 2015
Tallahassee, Florida 32301

In Reply Refer To:
Frank J. Keel
Historic Sites Specialist
(904) 487-2333
Project File No. 952245

RE: Cultural Resource Assessment Review Request
A Cultural Resources Assessment Survey, Interstate 4, Polk County, Florida. By Archaeological Consultants, Inc., March 1995 (revised April and May 1995).
SPN: 16320-1402
WPN: 1147948
FPN: ACDH-4-1(130)25

Dear Mr. Skinner:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), as well as the provisions contained in Chapter 267.061, *Florida Statutes* and Chapter 1A-46, *Florida Administrative Code*, we have reviewed the results of the field survey of the referenced project performed by Archaeological Consultants, Inc., and find them to be complete and sufficient.

We note that 14 previously unrecorded archaeological sites (8PO4104-4109, 4111, 4113-4119) and seven previously unrecorded historic structures (8PO5056-4057, 4059-4062 and 4612) were located during the course of this survey. We also note the five previously recorded historic properties (8PO111, 1549, 2256, 4042 and 4100) were revisited. Based on the results of the survey, all historic properties were determined to be ineligible for listing in the *National Register of Historic Places*, or otherwise of historical or architectural value. This office concurs with this determination. Therefore, it is the opinion of this office that the proposed undertakings will have no effect of historic properties listed or eligible for listing in the *National Register of Historic Places*, or otherwise of historical or architectural value.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's archaeological and historic resources is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Kfk
xc: C. L. Irwin, FDOT
C. O. Morgan, FDOT, District 1

Appendix E
4(f) Determination Regarding Wendell Watson Elementary

U.S. Department of Transportation
Federal Highway Administration

Florida Division Office

227 N. Bronough St.
Room 2015
Tallahassee, Florida 32301

March 22, 1993

IN REPLY REFER TO: HPO-FL

Mr. David May
District Secretary
Florida Department of Transportation
801 North Broadway
Bartow, Florida 33830-1249

Attention: Ms. Kimberly Warren

Dear Mr. May:

Subject: Florida - Project No. ACDH-4-1(130)25
State Project No. 16320-1402
Section 4(f) Applicability
Wendell Watson Elementary School
Polk County

Reference is made to Ms. Kimberly Warren's letters dated February 27, 1995 (submitted by your March 20, 1995 route slip), requesting our review and determination of Section 4(f) applicability to the subject Property.

As documented in the Wendell Watson Elementary School Section 4(f) Determination of Applicability Report, no right-of-way will be acquired under the preferred Alternate 3, and constructive use is not expected to significantly diminish the school's vital functions. Therefore, we have determined that Section 4(f) does not apply to the Wendell Watson Elementary School for Alternate 3.

Sincerely yours,

Melissa L. Ridenour
for J. R. Skinner
Division Administrator

cc: Mr. Leroy Irwin, FDOT (MS-37)

Appendix F
WQIE Checklist

DRAFT
MAY 1995

WQIE CHECK LIST

Project Name: I-4 (S.R. 400) County: Polk
State Project Number: 16320-1402 WPI Number: 1147948
Federal- Aid Project Number: ACDH-4-1(130)25
Short project description: The Florida Department of Transportation is proposing improvements to Interstate 4 (SR 400) from west of Memorial Boulevard to the Polk/Osceola County line--a distance of about 47.4 km (29.5 mi)--in Polk County, Florida. Improvements include widening the existing four-lane divided highway to six general purpose lanes, four special use lanes and sufficient right-of-way for future inclusion of high speed rail service in the median.

PART 1: DETERMINATION OF WQIE SCOPE

Does project increase impermeable surface area? X Yes _No
Does project alter the drainage system? X Yes _No
If the answer to both questions is no, complete the WQIE by checking Box A in Part 4.
Do environmental regulatory requirements apply? X Yes _No
If no, proceed to Part 4 and check Box B.

PART 2: PROJECT CHARACTERISTICS

20-year design ADT: varies; minimum 100,776; maximum 144,003 Expected speed limit: 104.6 kph (65 mph)
Drainage area: 667.0 hectares 45% Impervious 45% Pervious
Land Use: 10 % Residential 8 % Commercial 1 % Industrial
40 % Agricultural 20 % Wetlands 21 % Other Natural
Potential large sources of pollution (identify): Construction activity (temporary) and known areas of petroleum contamination as identified in CSER.

Groundwater receptor (name of aquifer or N/A): Floridan (Project is outside of the recharge are of the Biscayne Aquifer)

Designated well head protection area: X Yes _No Name: City of Lakeland Northwest Wellfield and City of Lakeland Northeast Wellfield

Sole source aquifer: _Yes X No Name:
Groundwater recharge mechanism: infiltration

(Notify District Drainage Engineer if karst conditions expected)

Surface water receptor (name or N/A): Green Swamp
Classification: _I _II X III _IV _V

Special designation (check all that apply):
_ ONRW _ OFW _ Aquatic Preserve _ Wild & Scenic River
_ Special Water _ SWIM Area _ Local Comp Plan _ MS4 Area
X Other (specify): Green Swamp--Area of Critical State Concern

Conceptual storm water conveyances & systems (check all that apply):
X Swales X Curb and Gutter _ Scuppers X Pipe _ French Drains
X Retention/Detention Ponds _ Other

PART 3: ENVIRONMENTAL REGULATORY REQUIREMENTS

Regulatory Agency (check all that apply)		Reference citation for regulation criteria (attach copy of pertinent pages)	Most stringent criteria (check all that apply)
USEPA	X	NPDES	__
FDEP	X	Chapter 17-3 of FAC	__
WMD (Specify) SWFWMD and SJRWMD	X	SWFWMD: 40D-4 and 40D-40 FAC SJRWMD: 40C-4, 40C-42, and 40C-40 FAC	X
OTHER (Specify)	__		__

Proceed to Part 4 and check Box C.

PART 4: WQIE DOCUMENTATION

A. _ Water quality is not an issue.

B. _ No regulatory requirements apply to water quality issues. (Document by checking the "none" box for water quality in Section 6.C.3 of Form 508-01 or Section 5.C.3 of Form 508-05.)

C. X Regulatory requirements apply to water quality issues. Water quality issues will be mitigated through compliance with the quantity design requirements placed by SWFWMD and SJRWMD, an authorized regulatory agency. (Document by checking the "none" box for water quality in Section 6.C.3 of Form 508-01 or Section 5.C.3 of Form 508-05.)

Evaluator Name (print): DAVID REATTER

Office:

Signature: Date: 10 MAY 95

Certificate #: 148

Appendix G
Wildlife and Habitat Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. BOX 2676

VERO BEACH, FLORIDA 32961-2676

RECEIVED

JUN 12 1998

District One
Environmental Management

June 11, 1998

Bryan Williams
District Environmental Manager
Florida Department of Transportation
P.O. Box 1249
Bartow, FL 33830-1249

FWS Log No.: 4-1-97-I-524
Federal Aid Project No.: ACDH-4-1(130) 25
State Project No.: 16320-1402
Dated: February 13, 1998
Applicant: Florida Department of Transportation
County: Polk

Dear Mr. Williams:

Thank you for your February 13, 1998, letter to the U.S. Fish and Wildlife Service (FWS) reinitiating section 7 consultation under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (ESA). We have assigned FWS Log Number 4-1-97-I-524 to this consultation.

We understand that the Florida Department of Transportation (FDOT) is proposing to widen Interstate 4 from west of Memorial Boulevard to the Polk/Osceola County line in Polk County, Florida. The proposed project area is approximately 29.5 miles (47.4 km) long and will widening Interstate 4 from a four-lane, divided highway to a six-lane general purpose highway, which includes four special-use lanes (high occupancy/single occupancy vehicles) with provisions for rail service in the median.

In your February 13, 1998, letter, you indicated that your project had been modified and will affect an additional 1.77 acres of occupied Florida scrub-jay *(Aphelocoma coerulescens)* habitat. With this modification, a total of 3.17 acres of occupied Florida scrub-jay habitat will be affected by the proposed action. Furthermore, you stated that FDOT is proposing to compensate for this lost habitat by withdrawing credits from your Highlands Mitigation Bank. We support your efforts to compensate for lost habitat by withdrawing 6.34 acre credits from your Mitigation Bank.

RECEIVED

JUN 16 1998

SVERDRUP CORPORATION
BARTOW, FLORIDA

In addition, we recommend that FDOT modified the project plans to include the planting of sod along the roadway in a manner that minimizes the exposure of bare sand, thus deterring any roadside foraging of scrub-jays. Also, since the right-of-ways have been clearly defined, these areas shall be clearly marked and avoided to prevent further degradation of occupied scrub habitat due to construction activities.

Your project is proposing to remove habitat that is occupied by the Florida scrub-jay and may affect the species. Based on the fact that you are proposing to affect wetlands of the United States and will be applying to the Department of Army for a permit, the U.S. Army Corps of Engineers will consult with the FWS under section 7 of the ESA during the public notice comment period. At that time we will provide comments concerning the proposed actions.

Thank you for your cooperation in the effort to protect endangered and threatened species. If you have any questions, please contact Grant Webber at (561) 562-3909.

Sincerely,

James J. Slack
Project Leader
South Florida Field Office

cc:
GFC, Vero Beach, FL
COE, Tampa, FL

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecosystem Office
P.O. Box 2676
Vero Beach, Florida 32961-2676

August 27, 1997

RECEIVED
AUG 29 1997
District One
Environmental Management

Mark A. Schulz
Environmental Project Manager
Florida Department of Transportation
P.O. Box 1249
Bartow, FL 33830-1249

FWS Log No.: 4-1-97-I-524
Federal Aid Project No.: ACDH-4-1(130) 25
State Project No.: 16320-1402
Dated: March 18, 1997
Applicant: Florida Department of Transportation
County: Polk

Dear Mr. Schulz:

Thank you for your July 28, 1997, letter to the U.S. Fish and Wildlife Service (FWS) submitted in response to our May 8, 1997, letter requesting additional information for the proposed road-widening project referenced above. This letter represents the FWS' view on the effects of the proposed action in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (ESA). We have assigned FWS Log Number 4-1-97-I-524 to this consultation.

The Florida Department of Transportation (FDOT) is currently conducting a Project Development and Environmental Study for improvements to Interstate 4 from west of Memorial Boulevard to the Polk/Osceola County line in Polk County, Florida. The purpose of the study is to provide detailed information necessary for the FDOT to reach a decision on the type and design of the road improvements that are warranted within the study area. The study area length is approximately 29.5 miles (47.4 km) long to accommodate present and future traffic demands. The project involves the widening of Interstate 4 from a four-lane, divided highway to a six-lane general purpose highway, which includes four special-use lanes (high occupancy/single occupancy vehicles) with provisions for rail service in the median.

Our May 8, 1997, letter requested additional information concerning three federally threatened bald eagle *(Haliaeetus leucocephalus)* nests, PO-49, PO-50A and PO-64, which are in the vicinity of the project area. Available information indicates that PO-49 was blown out of the tree, and the nest tree was destroyed. A new nest, PO-49A, was constructed approximately 4,100

feet south of the proposed project. We have designated a primary zone for this nest to extend 750 feet in all directions from the nest and a secondary zone to extend an additional 750 feet from the boundary of the primary zone, for a total distance of 1,500 feet from the nest. Information indicates that nest PO-50A is located 3,800 feet northwest of the project area. Given the surrounding habitat and development, we have designated a primary zone that extends 750 feet from the nest and a secondary zone that extends an additional 750 feet from the boundary of the primary zone, for a total distance of 1,500 feet from the nest. As stated in our May 8, 1997, letter, PO-64A is approximately one mile from the project area.

Given the above information, the proposed project is located outside of the protection zones for bald eagle nests PO-49, PO-49A, PO-50A, and PO-64A. Therefore, we conclude that the proposed project is not likely to adversely affect the aforementioned bald eagle nests.

Although this does not constitute a Biological Opinion described under section 7 of the ESA, it does fulfill the requirements of the ESA, and no further action is required. If modifications are made to the project or if additional information involving potential impacts on listed species becomes available, reinitiation of consultation may be necessary.

Thank you for your cooperation in the effort to protect endangered and threatened species. If you have any questions, please contact Grant Webber at (561) 562-3909.

Sincerely,

Thomas E. Grahl
Acting Field Supervisor,
South Florida Ecosystem Office

cc:
GFC, Vero Beach, FL
COE, Tampa, FL

FLORIDA GAME AND FRESH WATER FISH COMMISSION

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY J. HARTMAN, Director
FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, FL 32399-1600
(850) 488-6661
SUNCOM 278-6661
FAX (850) 922-5679
TDD (850) 488-9542

March 17, 1998

RECEIVED
MAR 23 1998
District One
Environmental Management

Ms. Kimberly Warren
Florida Department of Transportation
District One
P. O. Box 1249
Bartow, FL 33831-1249

RE: Proposed Right of Way Addition to I-4 Project from West of Memorial Boulevard to the Polk/Osceola County Line, Polk County

Dear Ms. Warren:

The Office of Environmental Services has reviewed the document submitted for the project referenced above. Based on the information provided, we concur with the proposed increase in mitigation acreage for the anticipated increase in impacts to Type III Florida scrub jay habitat.

Sincerely,

Bradley J. Hartman

Bradley J. Hartman,
Director, Office of Environmental Services

BJH/JMW/rs
ENV 1-13-2
CC: Mr. Terry Gilbert
i4conc~1.wpd

United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. BOX 2676

VERO BEACH, FLORIDA 32961-2676

RECEIVED

JUN 12 1998

District One
Environmental Management

June 11, 1998

Bryan Williams
District Environmental Manager
Florida Department of Transportation
P.O. Box 1249
Bartow, FL 33830-1249

FWS Log No.: 4-1-97-I-524
Federal Aid Project No.: ACDH-4-1(130) 25
State Project No.: 16320-1402
Dated: February 13, 1998
Applicant: Florida Department of Transportation
County: Polk

Dear Mr. Williams:

Thank you for your February 13, 1998, letter to the U.S. Fish and Wildlife Service (FWS) reinitiating section 7 consultation under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (ESA). We have assigned FWS Log Number 4-1-97-I-524 to this consultation.

We understand that the Florida Department of Transportation (FDOT) is proposing to widen Interstate 4 from west of Memorial Boulevard to the Polk/Osceola County line in Polk County, Florida. The proposed project area is approximately 29.5 miles (47.4 km) long and will widening Interstate 4 from a four-lane, divided highway to a six-lane general purpose highway, which includes four special-use lanes (high occupancy/single occupancy vehicles) with provisions for rail service in the median.

In your February 13, 1998, letter, you indicated that your project had been modified and will affect an additional 1.77 acres of occupied Florida scrub-jay *(Aphelocoma coerulescens)* habitat. With this modification, a total of 3.17 acres of occupied Florida scrub-jay habitat will be affected by the proposed action. Furthermore, you stated that FDOT is proposing to compensate for this lost habitat by withdrawing credits from your Highlands Mitigation Bank. We support your efforts to compensate for lost habitat by withdrawing 6.34 acre credits from your Mitigation Bank.

In addition, we recommend that FDOT modified the project plans to include the planting of sod along the roadway in a manner that minimizes the exposure of bare sand, thus deterring any roadside foraging of scrub-jays. Also, since the right-of-ways have been clearly defined, these areas shall be clearly marked and avoided to prevent further degradation of occupied scrub habitat due to construction activities.

Your project is proposing to remove habitat that is occupied by the Florida scrub-jay and may affect the species. Based on the fact that you are proposing to affect wetlands of the United States and will be applying to the Department of Army for a permit, the U.S. Army Corps of Engineers will consult with the FWS under section 7 of the ESA during the public notice comment period. At that time we will provide comments concerning the proposed actions.

Thank you for your cooperation in the effort to protect endangered and threatened species. If you have any questions, please contact Grant Webber at (561) 562-3909.

Sincerely,

James J. Slack
Project Leader
South Florida Field Office

cc:
GFC, Vero Beach, FL
COE, Tampa, FL

Memorandum

Sverdrup
CORPORATION

TO: Post, Buckley, Schuh & Jernigan, Inc.
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1066

ATTN: Mr. Peter Kelliher, P.E.
Project Manager

FROM: Jack Montpetit
Project Manager

DATE: May 16,1995

SUBJECT: I-4 Design, Section 4
State Project No. 16320-1436
W.P.I. No.: 1147952
Polk County
Wildlife Crossing Criteria

We have received a response from the Florida Game and Fresh Water Fish Commission (FGFWFC) regarding their recommendations for a wildlife crossing in the Saddle Creek area (see attached letter from Mr. Hartman, dated May 12, 1995).

As you can see, the guidance is quite general. Therefore, it will be necessary to develop a concept, then meet with the FGFWFC to obtain their concurrence that the concept will meet their needs.

- MORE -

Attachment

DISTRIBUTION: John DeWinkler (FDOT)
T.J. Martin (Baker)
RGM, DPG, RAF, CAJ

FILE: 08-004
h:013266\admn\memo0214.jrm

335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

Based on the information provided in the letter and in previous discussions with FGFWFC staff, we offer the following approach to incorporating this feature into your design:

- The suggested location for the wildlife crossing is roughly centered on the eastern boundary of the large wetland area that straddles I-4 approximately halfway between SR 33 and the Polk County Parkway interchange (Station 378±).

- The crossing opening vertical clearance is recommended to be approximately 2.5m (8 feet), with the bottom being a combination of wet and dry areas. For example: the ground under half the length of the bridge could be graded to be approximately 0.3m (one foot) above seasonal high water and the remainder of the area under the bridge located at approximately the same elevation as the adjacent wetlands or perhaps the flow line of a proposed drainage structure in that area (if applicable). The 2.5m vertical clearance should be provided in the dry area. Note that the agency did not specify how much of the crossing should be wet or dry, so the existing terrain (e.g. profile of existing ground at proposed north and south right-of-way lines) should be evaluated to determine the most appropriate ratio. We suggest a minimum of 20% dry crossing.

- Per FGFWFC, the total crossing opening width (i.e. bridge length) should be approximately 30m (100 feet). The structure need not be single span, as long as a tunnel-like effect is avoided. Various structure alternatives (AASHTO girders, flat slabs) should be evaluated to determine the most economical structure type that meets the requirements. Be sure to consider increased embankment costs associated with greater depth structure types, as well as the cost of the structure itself. Ultimately, a BDR will be required for the structure, but a preliminary assessment needs to be made at this time for purposes of coordination with FGFWFC. Note that since aesthetics are not a consideration at this location, end slopes may be used in lieu of vertical walls at the abutments, if appropriate.

- The FDOT has decided that the bifurcation that FGFWFC has requested is not to be provided. The proposed bridges are to be placed on the currently proposed alignment.

- The revised profile must not preclude the future design and construction of a slip ramp in this area.

- MORE -

We would like to schedule a meeting with FGFWFC to review the concept in Sverdrup's office on either Tuesday, May 23, or Friday, May 26. To facilitate FGFWFC's understanding of the proposed concept at the meeting, we request that an elevation view of the bridge/crossing be prepared at an appropriate scale to be pinned on the wall for discussion. The drawing should have the same horizontal and vertical scale, to give a true representation of proportions. Plan views of both the Stage I and the Stage II configurations should also be prepared. Alternatives can be presented if there is no one clear-cut, best solution. The intent is to clearly communicate to the biologists the concept(s) resulting from the engineering evaluation of their recommendations, so the drawings need only be detailed enough to convey how the requirements are being addressed (e.g. show/label wet and dry areas, seasonal high water elevation, existing ground profiles at proposed north and south right-of-way lines, vertical clearance, estimated span arrangement and structure depth/proportions, proposed roadway profile approaching bridge, etc., and any other information pertinent to the development of the proposed concept).

Please advise me by Friday May 19 as to whether the meeting with FGFWFC should be scheduled for May 23 or May 26. If you have any questions in the meantime, do not hesitate to call.

MAY 1 5 1995

SVERDRUP CORPORATION
BARTOW, FLORIDA

FLORIDA GAME AND FRESH WATER FISH COMMISSION

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY J. HARTMAN, Director
FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, FL 32399-1600
(904) 488-6661
SUNCOM 278-6661
FAX (904) 922-5679
TDD (904) 488-9542

May 12, 1995

Mr. John H. DeWinkler, P.E.
Florida Department of Transportation
P.O. Box 1249
Bartow, Florida 33830

Re: I-4 Widening: Underpass at Saddle Creek, Polk County

Dear Mr. DeWinkler:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission (GFC) has reviewed your request regarding justification and design specifications for installing an underpass that would accommodate wildlife at some location between SR 33 and the proposed Polk County Parkway East, and provides the following information.

This portion of I-4 lies at the northern end of the southern phosphate district's Integrated Habitat Network, one of two (the other being the Green Swamp) regionally significant wildlife habitat systems that the GFC recognizes as having been functionally impaired by the habitat barrier imposed by I-4 in Polk County. The phosphate district's Integrated Habitat Network (Cates, 1992) is the culmination of years of collaboration between the GFC and the Florida Department of Environmental Protection regarding the design of reclaimed land for optimal fish and wildlife recovery after mining. It is an industry-accepted plan that ties habitat reclamation into a core reserve of interconnected riverine bottomland (King and Cates, 1994).

The Peace River forms the spine of this reserve, and its functional expectation is to supply a diverse assortment of wildlife colonizers as habitat is reclaimed on mined land in its vicinity. The uppermost tributary to the Peace River, Saddle Creek, is the northern extension of this network, and it is the target of an ambitious habitat rebuilding campaign of the GFC's Tenoroc Fish Management Area and the privately owned mined lands in its vicinity along I-4 (King et al., 1994).. Meanwhile, the capacity of the Peace River to supply colonizers for habitat reemergence in this area has likely been impaired by extensive mining to the south (e.g., at Lake Hancock) and by land use development in this northern portion of the district. A restored connection between the Peace River and the Green Swamp, one of the region's most prominent biodiversity hot spots (Cox et al., 1994), is a key element of the Integrated Habitat Network plan, and one that could catalyze the successful implementation of this plan in an area of impoverished wildlife values.

SVERDRUP	
COPIES/ROUT.	
C	INTL
✓	CAJ
✓	JRM
✓	JPT
✓	DPG
✓	RGM
KWD: 08	
PROJ: 004	

While we recognize the benefit of a wildlife crossing in the Saddle Creek area, we also recognize that the expected resource beneficiary is as yet only anticipated, not fully planned; therefore, we cannot offer definitive design recommendations since those are normally tailored to a known complement of species and site conditions. Rather, we suggest a design strategy that minimizes cost while ensuring a useable return to the public. Accordingly, we recommend a bridge at this location, with a design that could alternatively accommodate people or cattle should its wildlife intent fail to materialize. An 8-foot-high by 100-foot-wide (interior dimensions) cross-sectional profile would be sufficient in this regard. We also suggest that it be situated to include one of the planned drains, and the floor of the structure should be natural ground. This design would allow for wetland and upland habitat to converge at the openings, but would not restrict its use during the time of the year when a small culvert and drain might be flooded. We also believe that a bifurcated roadway, separated by a grassed median, would be an important design consideration to minimize the tunnel effects and enhance animal use of the structure. If a rail line is eventually constructed in the I-4 median, we recommend use of a trestle bridge at this location to maximize light penetration to the ground below.

Sincerely,

Bradley J. Hartman

Bradley J. Hartman, Director
Office of Environmental Services

BJH/TK/MAP
ENV 1-13-2
ENV 1-3-2
i4sadcr.dot

cc: Ms. Cheryl A. Jones, P.E.
Sverdrup Civil, Inc.
P.O. Box 1636
Bartow, Florida 33831

Mr. Bud Cates, FDEP, Tallahassee

Mr. Dan Pennington, FDEP, Tallahassee

Mr. Clark Hull, SWFWMD, Brooksville

Ms. Rebecca Jetton, DCA, Bartow

References

Cates, James W. H. 1992. "A Regional Conceptual Reclamation Plan for the Southern Phosphate District of Florida." Florida Department of Natural Resources (now Florida Department of Environmental Protection), Bureau of Mine Reclamation. 55 pp.

Cox, James, Randy Kautz, Maureen MacLaughlin, and Terry Gilbert. 1994. "Closing the Gaps in Florida's Wildlife Habitat Conservation System." Florida Game and Fresh Water Fish Commission. 239 pp.

King, Tim and Bud Cates. 1994. "A Three-Part Regional Habitat Mitigation Plan as the Foundation of the Southern Phosphate District of Florida's Integrated Habitat Network." Florida Game and Fresh Water Fish Commission, Office of Environmental Services. 9 pp.

King, Tim, Danon Moxley, and Bud Cates. 1994. "A Proposed Ecosystem Plan for the Upper Peace River: Alternative Mitigation for Upper Saddle Creek." Florida Game and Fresh Water Fish Commission, Office of Environmental Services. 12 pp.

Memorandum

Sverdrup
CORPORATION

TO: David Volkert & Associates, Inc.
3409 West Lemon Street, Suite 1
Tampa, Florida 33609

MAY 1 9 1995
MICH R, JR., INC.
FL

ATTN: Mr. Brian McDermott, P.E.
Project Manager

FROM: Jeffrey P. Toussant, P.E. JPT
Project Manager

DATE: May 17,1995

SUBJECT: I-4 Section 6 - East of SR 557 to West of US 27
State Project No. 16320-1444
W.P.I. No.: 1147954
Polk County
Wildlife Crossing Criteria

We have received a response from the Florida Game and Fresh Water Fish Commission (FGFWFC) regarding their recommendations for a wildlife crossing in the Green Swamp area (see attached letter from Mr. Hartman, dated May 12, 1995).

As you can see, the guidance is quite general. Therefore, it will be necessary to develop a concept, then meet with the FGFWFC to obtain their concurrence that the concept will meet their needs.

- MORE -

Attachment

DISTRIBUTION: John DeWinkler (FDOT)
T.J. Martin (Baker)
RGM, DPG, RAF, CAJ

FILE: 08-006
h:013266\admn\memo0215.jpt

335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

Based on the information provided in the letter and in previous discussions with FGFWFC staff, we offer the following approach to incorporating this feature into your design:

- As anticipated, the suggested locations for the wildlife crossings are at the two deep muck deposits identified in your evaluation report for spanning these areas, dated 5/95. The wildlife crossing requirements are "piggy-backed" on the structure requirements for the geotechnical considerations.

- The crossing opening peak vertical clearance is recommended to be approximately 2.5m (8 feet) above ground at one location, with the clearance then reducing to a minimum clearance for structural purposes. (We suggest using 1.8 m above seasonal high water at the end bents, which should provide compliance with the structures Design Guidelines, Section 2.4.) Note that the high point need not be at the center span and in fact should be located based on your evaluation.

- The ground under the crossing should provide a combination of wet and dry areas. For example: the ground under one-quarter of the length of the bridge could be graded to be approximately 0.3m (one foot) above seasonal high water and the remainder of the area under the bridge located at approximately the same elevation as the adjacent wetlands. The 2.5m vertical clearance should be provided in the dry area thus setting the bottom of the bridge at 2.8m above seasonal high water. Note that the agency did not specify how much of the crossing should be wet or dry, so the existing terrain (e.g. profile of existing ground at proposed north and south right-of-way lines) should be evaluated to determine the most appropriate ratio. We suggest a minimum of 20% dry crossing.

- Various structure alternatives (AASHTO girders, flat slabs) should be evaluated to determine the most economical structure type that meets the requirements. Be sure to consider increased embankment costs associated with greater depth structure types, as well as the cost of the structure itself. Ultimately, a BDR will be required for the structures, but a preliminary assessment needs to be made at this time for purposes of coordination with FGFWFC. Note that since aesthetics are not a consideration at this location, end slopes may be used in lieu of vertical walls at the abutments, if appropriate.

- The FDOT has decided that the bifurcation that FGFWFC has requested is not to be provided. The proposed bridges are to be placed on the currently proposed alignment.

- MORE -

We would like to schedule a meeting with FGFWFC to review the concept in Sverdrup's office on either Tuesday, May 23, or Friday, May 26. To facilitate FGFWFC's understanding of the proposed concept at the meeting, we request that an elevation view of the bridge/crossing be prepared at an appropriate scale to be pinned on the wall for discussion. The drawing should have the same horizontal and vertical scale, to give a true representation of proportions. Plan views of both the Stage I and the Stage II configurations should also be prepared. Alternatives can be presented if there is no one clear-cut, best solution. The intent is to clearly communicate to the biologists the concept(s) resulting from the engineering evaluation of their recommendations, so the drawings need only be detailed enough to convey how the requirements are being addressed (e.g. show/label wet and dry areas, seasonal high water elevation, existing ground profiles at proposed north and south right-of-way lines, vertical clearance, estimated span arrangement and structure depth/proportions, proposed roadway profile approaching bridge, etc., and any other information pertinent to the development of the proposed concept).

Please advise me by Friday, May 19 as to whether the meeting with FGFWFC should be scheduled for May 23 or May 26. If you have any questions in the meantime, do not hesitate to call.

FLORIDA GAME AND FRESH WATER FISH COMMISSION

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY J. HARTMAN, Director
FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, FL 32399-1600
(904) 488-6661
SUNCOM 278-6661
FAX (904) 922-5679
TDD (904) 488-9542

May 12, 1995

Mr. John H. DeWinkler, P.E.
Florida Department of Transportation
P.O. Box 1249
Bartow, Florida 33830

Re: I-4 Widening: Underpass at Green Swamp Creek, Polk County

Dear Mr. DeWinkler:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission (GFC) has reviewed your request regarding justification and design specifications for installing an underpass that would accommodate wildlife at some location between CR 557 and US 27, and provides the following information.

JUSTIFICATION

This portion of I-4 lies within the Green Swamp Area of Critical State Concern's core area of habitat, as identified by the Green Swamp Task Force of Polk County in 1992 (see attached map). This area is also one of two (the other being the Saddle Creek area) regionally significant wildlife habitat systems that the GFC recognizes as having been functionally impaired by the habitat barrier imposed by the construction of I-4 in Polk County. Based on the following analyses, we believe that the justification exists to construct one or more wildlife-friendly underpasses within this area.

1. Contiguity and extent of habitat. Our LANDSAT-based vegetation map indicates that I-4 splits a discrete, north-south system of previously contiguous strands of cypress and hardwood swamp separated by upland ridges lying between CR 557 and US 27. This system, which is roughly 20 miles long and 6 miles wide, lies within the headwaters of the Oklawaha River basin in Polk and Lake counties. The northern portion of this area abuts a second, larger area of relatively undeveloped land, most of which is in public ownership (i.e., the Green Swamp Wildlife Management Area, Withlacoochee State Forest, Save Our Rivers land) or is targeted for acquisition through various state, regional, and local conservation programs.

2. Relative intactness of habitat. The wetland strands on either side of the I-4 corridor are still relatively intact, and provide similar

habitat of similar quality. The upland areas have, for the most part, been altered to support agriculture, but remain remote enough from intensive human activities to maintain some degree of habitat quality for species that are adapted to prairie-like conditions, forested edges, and systems characterized by upland-wetland mosaics.

3. Habitat quality. Analyses of our LANDSAT/GIS data indicate that this area is important for 4 to 6 listed species; it is highly ranked in terms of biodiversity, providing habitat for at least 7 focal wildlife species (i.e., those whose habitat requirements umbrella a variety of other species' requirements); it is also highly ranked in terms of species diversity, providing habitat for over 40 species of wildlife; and it provides sufficiently high quality habitat to rank as a Strategic Habitat Conservation Area.

4. Genetic exchange. Currently, I-4 poses an obstacle, but probably not a complete barrier, to genetic exchange for terrestrial wildlife species on either side of this major transportation corridor that, with the exception of the eastern coastal ridge, divides Florida. An unpublished roadkill study conducted by the League of Environmental Organizations indicated that there is a surprisingly diverse array of wildlife that lives adjacent to this corridor in the referenced portion within Polk County. Some of these species are wide-ranging mammals that may be able to incorporate an underpass within their home range, while others are amphibian and reptile species that, while not necessarily wide ranging, are a critical component of the diet of avian species, which may not otherwise be directly affected by a physical barrier on the ground.

Unless some form of wildlife-friendly underpasses were constructed, we anticipate that the build-out design, which includes four solid walls, would bar genetic exchange to all land-dwelling species north and south of the alignment, except for those few individuals that manage to cross via vehicular bridges or underpasses. A structure that would allow at least occasional movement of individuals without the immediate threat of traffic mortality would ensure that the proposed road improvement did not effectively isolate regional populations of wildlife species.

Overall, we believe that there is clear justification to construct wildlife-friendly underpasses within the referenced portion of I-4; however, we believe that the location will be driven by non-wildlife issues, such as the possible need to improve hydrological connection in the Oklawaha headwaters, the geotechnical constraints (e.g., muck deposits) identified by your staff, or land acquisition programs. In terms of maintaining suitability for wildlife use in the long term, the critical component will be the ability to maintain or improve, as appropriate, the current local habitat values. Unlike the Saddle Creek area, the planning framework within which to protect the contiguity of habitat is minimal. The current wetland regulatory structure makes it unlikely that the large hardwood and cypress swamps in this area would be eliminated, but the upland habitat could be further developed,

and the wetlands fragmented. If this occurs, then the justification would be greatly weakened unless the Florida Department of Environmental Protection or the St. Johns River Water Management District (SJRWMD) can identify some compelling reason to protect or restore hydrological connections in this area, and those connections consist of jurisdictional wetlands wide enough on either side of I-4 to provide relatively good habitat value regardless of future upland disturbance.

In order to maintain this justification in the long term, we therefore recommend that the main focus of mitigation for wetland impacts be aimed at the acquisition of land on either side of I-4 at the same location as the underpasses. If this land were managed for conservation, then wildlife-friendly underpasses could be piggybacked either with structural considerations for the muck deposits or hydrological connections, or both. If this acquisition is not possible, due to an unwilling seller, then acquisition of land adjacent to publicly owned land would be the next-best alternative. The issue of whether to construct wildlife-friendly underpasses would hinge on whether SJRWMD identifies jurisdictional wetland systems of substantial width occurring on both sides of I-4 at the same location and extending for a considerable distance.

DESIGN CRITERIA

Designing a successful wildlife underpass is currently not an exact science, since relatively few underpasses have been constructed and monitored in Florida. Based on information on use by various species at the underpasses along Alligator Alley, SR 46, and SR 29, we anticipate that an underpass that incorporates an 8-foot-high by 100-foot-wide opening (minimum) would be large enough to allow for some minimum wildlife movement. This opening should be located so that there is a wetland at each end, and the bottom should be contoured to reestablish an appropriate hydrological connection, the exact dimensions of which would be determined by SJRWMD hydrologists. The bottom of the opening should be composed of soil, and stabilized by standard methods until native vegetation can be reestablished.

The exact dimensions and shape of a wildlife-friendly underpass would vary depending on the primary reason to construct a bridge or large box culvert and road-grade design limitations. If hydrological protection and restoration are required by the SJRWMD, then we would recommend that the width span the 10-year floodplain or be a minimum of 100 feet wide, whichever is greatest, in order to form a riparian corridor that includes land that is usually dry, thereby accommodating wildlife species that ordinarily travel on dry land.

If no hydrological connections beyond standard culverts are deemed necessary, then the two major muck deposits would be logical places to construct an underpass, since it is our understanding that it may be in your best interest to bridge them for geotechnical reasons. In this case, the

widths of these deposits, which we understand are on the order of 400 feet, would determine the ultimate interior width of each underpass. Since the muck deposits are so extensive, it would not be necessary to provide an 8-foot ceiling for a width of 100 feet; rather, there is the latitude in this case to design the bridge with a peak ceiling height of 8 feet, and taper this ceiling to the ground at a point roughly corresponding to the edges of the deposits. The location of this 8-foot-high peak would be driven by the most cost-effective design from your standpoint, but placing it over a hydrological connection between wetlands that occur on both sides of the roadway, should the SJRWMD decide that such connections are desirable, would probably maximize the extent to which these bridges are wildlife friendly. We also believe that a bifurcated roadway, separated by a grassed median, would be an important design consideration to minimize the tunnel effects and enhance animal use of the structure. If a rail line is eventually constructed in the I-4 median, we recommend use of a trestle bridge at this location to maximize light penetration to the ground below.

We appreciate the opportunity to assist you in this planning effort that has so much potential to impact the region's wildlife. If there is any further information that you require, please do not hesitate to contact me or Ms. Mary Ann Poole, at our field office in Vero Beach (407-778-5094), or Mr. Terry Gilbert, at our headquarters in Tallahassee (904-488-6661).

Sincerely,

Bradley J. Hartman

Bradley J. Hartman, Director
Office of Environmental Services

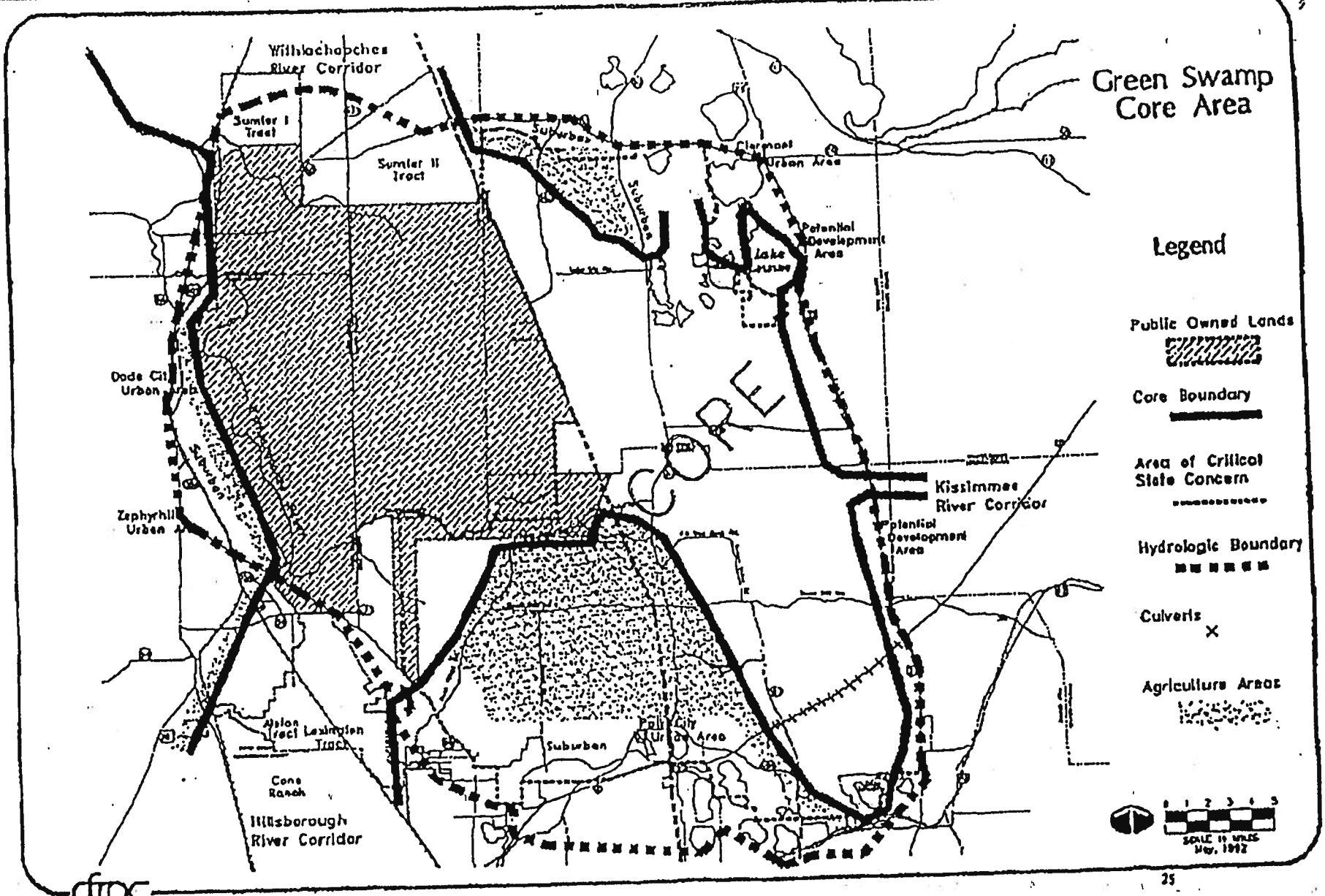
BJH/MAP
ENV 1-13-2
ENV 1-3-2
i4green.dot
Attachment
cc: Ms. Cheryl A. Jones, P.E.
Sverdrup Civil, Inc.
P.O. Box 1636
Bartow, Florida 33831

Mr. Dan Pennington, FDEP, Tallahassee

Mr. Bud Cates, FDEP, Tallahassee

Mr. Lance Hart, SJRWMD, Orlando

Ms. Rebecca Jetton, DCA, Bartow



Minutes of Meeting

Sverdrup
CORPORATION

RECEIVED
JUN - 7 1995
Dave R.

I-4 WIDENING PROGRAM - DISTRICT ONE
COORDINATION FOR WILDLIFE CROSSINGS
DESIGN SECTIONS 4 AND 6

DATE: May 26, 1995

TIME: 1:30 p.m.

PARTICIPANTS: (see attached sign-in sheet)

The referenced meeting was held in Sverdrup's Bartow office. The purpose was for the affected design consultants to present concepts for the proposed wildlife crossings to Mary Ann Poole of Florida Game and Fresh Water Fish Commission (FGFWFC), to ensure that concepts being developed will meet the agency's requirements. The PD&E consultant was also represented at the meeting so that the environmental document currently being prepared will also accurately address the wildlife crossings.

Section 6. Brian McDermott of David Volkert Associates presented the crossing concept being developed for Design Section 6. Bridges are proposed at two locations within Section 6 because of poor geotechnical conditions (deep muck deposits). These bridges will also function as wildlife crossings. Anticipated lengths are approximately 110m and 128m. Feasible structure types include AASHTO girders (approx. 18.33m spans) and flat slab (approx. 9.17m spans). It was agreed that the AASHTO girder alternate would be preferable because: 1) it is expected to be more economical because fewer piers are required than with the flat slab alternate; 2) it should be less noisy than the flat slab alternate, and 3) it provides for a more open, less restricted area for wildlife to cross underneath. Unless other significant factors come to light during the preparation of the Bridge Development Report (BDR), it is expected that the two bridges will be AASHTO girder structures. Final span lengths will be determined in the BDR, but span lengths of less than 12.2m will not be recommended, since that is the minimum span length that has been constructed to date and has been documented to function (Alligator Alley).

- MORE -

DISTRIBUTION: Participants
Bradley J. Hartman (FGFWFC, Tallahassee)
Terry Gilbert (FGFWFC, Tallahassee)
Tim King (FGFWFC, Lakeland)
Dan Pennington (FDEP, Tallahassee)
Bud Cates (FDEP, Tallahassee)
Lance Hart (SJRWMD, Orlando)
Rebecca Jetton (DCA, Bartow)
Jim Wilt (FDOT District 1)
JRM, DPG, CLC, RAF, GJR

FILE: 08, 36 - 004, 006
h:\013266\admn\min0041.caj

335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

The vertical clearance under the bridges will be 2.5m above Seasonal High Water (SHW). At the bridge ends, normal slope protection will be provided. Then, level, 3.0m wide maintenance berms at an elevation of approximately 0.3m above SHW will be constructed. From there the fill will slope at a rate of 10:1 down to the water and/or existing ground.

The ground conditions under the crossing were discussed. The existing roadway embankment (which is located where the future special purpose/HOV lanes will be) will be removed down to match the elevation of the existing ground along the north and south R/W lines. The remainder of the area under the bridges will be left as is. No provisions will made to specifically provide for part of the crossing to be wet and part dry.

It was agreed that high fencing should be provided across the median, between each pair of dual bridges, to keep wildlife from entering the median area. The configuration of fencing along the R/W lines will be determined at a future date and will be affected by whether the adjacent property is public or private at the time of construction.

Section 4. Steve Molecki of Post Buckley Schuh & Jernigan presented the wildlife crossing concept developed for Design Section 4. The proposed pair of bridges will be located near the eastern boundary of the large wetland area that straddles I-4 between SR 33 and the Polk County Parkway interchange. They will provide for a 30m crossing from toe of embankment slope to toe of embankment slope under the bridges. PBS&J has looked at two- and three-span structure alternates, using Type III and Type II AASHTO girders, respectively. They will also evaluate a flat slab structure type in the BDR. As with Section 6, span lengths of less than 12.2m will not be recommended.

A drainage channel will be constructed under the bridges to accommodate the drainage that is currently being carried in the existing box culvert located approximately at Station 378. The side slopes of the channel will be as flat as possible, while still meeting hydraulic requirements. Unless roadway design constraints dictate otherwise (such as location of future proposed slip ramp), the bridges will be centered lengthwise over the existing culvert/channel location.

The vertical clearance under the bridges will be 2.5m above dry ground (since SHW is below the existing ground elevation). At the bridge ends, normal slope protection will be provided, down to existing ground.

The existing roadway embankment (which is located where the future special purpose/HOV lanes will be) will be removed down to match the elevation of the existing ground along the north and south R/W lines. The remainder of the area under the bridges will be left as is, except for construction of the drainage channel as discussed above. The requirements for fencing will be the same as for Section 6.

Wild life Crossing Coordination

5/26/95 1:30

Name	Representing	Phone
Cheryl Jones	Sverdrup	(813) 534-8500
John H. DeWinkler	FDOT- D1	(813) 533-8161
Mary Ann Poole	FGFWFC	407-778-5094
Pete Kellchui	PBS+J	(813) 877-7275
Steve Malecki	PBS&J	877-7275
Shelly Flaherty	Baker	(813) 289-7546
JEFF SAWYER	BAKER	"
RICHARD REYNOLDS	VOLKERT	(813) 875-1365
JACK ROBERTS	VOLKERT	" "
Brian McDermott	Völkert	" "
Jeff Toussant	Sverdrup	813 534 8500
Nicole Whittaker	PB	(813) 874-5300
Ray G. Moses	Sverdrup	813 - 534 - 8500
DAVID REUTER	PB	[illegible]

Jeff Weibner

Minutes of Meeting

Sverdrup
CORPORATION

I-4 WIDENING - POLK COUNTY
WILDLIFE CROSSINGS IN GREEN SWAMP AREA

DATE: February 3, 1995 TIME: 10:00 a.m.

LOCATION: Sverdrup

PARTICIPANTS: (see attached sign-in sheet)

The referenced meeting was held to discuss information that Florida Game and Fresh Water Fish Commission (FGFWFC) might have regarding requirements for wildlife crossings in the Green Swamp area, located between CR 557 and US 27 (Design Section 6).

After introductions, Cheryl Jones (Sverdrup) presented an overview of the geotechnical problems associated with the proposed widening of I-4 in this area, namely the presence of two very deep muck deposits. Stone columns and bridging are being considered as potential solutions to the geotechnical problems. FDOT has been advised (informally) by the League of Environmental Organizations (LEO) that this area appears to have potential as a suitable location for wildlife crossings. For FDOT to incorporate wildlife crossings in this project, justification needs to be provided as well as specific recommendations regarding location, length and height of the opening, and the bottom elevation (i.e. does it need to be dry). A joint solution for these two issues may be possible if the muck deposits are bridged and if the resulting bridges are located in suitable locations for wildlife crossings. FDOT needs this information as soon as possible to enable the PD&E and preliminary engineering consultants to continue work.

Mary Ann Poole (FGFWFC) discussed various maps that she brought to the meeting, including Land Cover, Land Cover 2, Species Richness, Strategic Habitat Conservation Areas, Biodiversity Hot Spots, and Priority Wetlands for Listed Species. The maps demonstrated that a crossing in this area could potentially be important. However, FGFWFC does not have the data to definitively justify a crossing, nor does it have the means to collect such data. It was their understanding that FDOT and its consultants would be doing the necessary research as part of the project and that FGFWFC would review and comment on it.

-MORE-

Attachment

DISTRIBUTION: Participants
John DeWinkler, Jim Wilt (FDOT/District 1)
RGM, JRM, DPG, CLC

FILE: 08-006, 010

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Ms. Poole further explained that since FGFWFC is not regulatory agency, they are not in a position to require wildlife crossings as part of a project, nor can they dictate whether a crossing might qualify as mitigation credit. FGFWFC will provide comments when permit applications are submitted, but the water management district(s) addresses all mitigation issues. On this project, if bridges are provided at the proposed locations, SWFWMD may consider them a hydrologic reconnection (i.e. un-doing some damage caused by the original construction of I-4) and may allow mitigation credit on that basis. FDOT should coordinate with SWFWMD directly on this point. If the bridges are provided, re-establishment of wildlife access could be noted as an advantage, but it is a secondary issue to hydrology.

John Ryan (representing LEO) stated that a meeting has been scheduled for March 14 with FDOT, FDEP, and SWFWMD to discuss a Memorandum of Understanding for the I-4 project. John DeWinkler has indicated that FDOT will draft the MOU. Mr. Ryan provided a copy of the draft report addressing wildlife recommendations, including road kill data that has been collected on this area of I-4. Ms. Poole pointed out that the simply knowing the number of animals killed does not provide enough justification for FGFWFC to recommend construction of a crossing, because the direction of travel and reason for the attempted crossing is not known (e.g. did the animal just happen to wander onto the highway?), nor can the potential benefit be documented. It was acknowledged, however, that similar habitat having present similar wildlife species (including otters, raccoons, and armadillos) occurs on both sides of the I-4 corridor.

Ms. Jones and Mark Schulz (FDOT) both pointed out that it is beyond the scope of the FDOT's project to conduct a wildlife study outside of the project limits. FDOT will do what is required to obtain a permit and might consider accommodating recommended wildlife crossings if it is reasonable to do so, but FDOT is not in a position to perform the study necessary to determine the wildlife crossing requirements.

It was agreed that the next step should be FDOT coordination with SWFWMD and St. John's Water Management District to discuss the potential for mitigation credit for hydrologic reconnection. Sverdrup will pursue, with John DeWinkler.

Agenda

Sverdrup
CORPORATION

I-4 WIDENING PROGRAM
WILDLIFE CROSSINGS IN GREEN SWAMP AREA
February 3, 1995 - 10:00 a.m.

1. Introductions

2. Overview of Issues
   a. Geotechnical problems
      - description: deep muck deposits
      - potential solutions (stone columns, bridging)

   b. Wildlife crossings
      - justification
      - location
      - criteria for design (length and height of opening, bottom elevation)
      - effectiveness of bridges versus culverts

3. Potential for solution that addresses both issues
   - Are the muck deposits at an appropriate location for wildlife crossings?
   - What length bridge would meet both requirements?

4. Schedule
   - PD&E and preliminary engineering projects underway; on-hold in this area pending resolution of this issue.

5. Documentation of agreement
   - essential for FDOT to proceed
   - Memorandum of Understanding (FDOT/FGFWFC)

6. Other Issues/Concerns

335 East Van Fleet Drive, Bartow, FL 33830 (P.O. Box 1636 / 33831) - Telephone (813) 534-8500

I-4 WILDLIFE CROSSINGS MEETING

2/3/95 10:00 AM

NAME	COMPANY	PHONE NO.
Tim King	Game + Fish Comm	813/648-3206
Mike Moore	Peninsula Design	813/626-5400
Bob Whitman	Peninsula Design	"
Jeff Weiner	Parsons Brinckerhoff	813 874 5300
Brian McDermott	David Volkert	(813) 875-1365
Mary Ann Poole	EGFWFC	407-778-5094
David Reutter	PB Inc.	(813) 874-5300
Jeff Sawyer	Baker	(813) 289-7546
Shelly Flaherty	Baker	"
Mark A. Sakulu	FDOT	813) 533-8161 x2357
Cheryl Jones	Sverdrup	(813) 534-8500
Jeff Toussant	Sverdrup	"
John Ryan	LEO	813-293-6961

Sverdrup
CORPORATION
BARTOW, FLORIDA

Baker

RECEIVED
JAN 30 1995

Michael Baker Jr., Inc.
1408 North Westshore Boulevard
Suite 612
Tampa, Florida 33607
Box 21387, Tampa, FL 33622-1387

(813) 289-7546
FAX (813) 289-5651

January 24, 1995

I-4 Project Development and Environment Study
State Project No. 16320-1402
Work Program Item No. 1147948
Federal-Aid Project No. ACDH-4-1(130)25

MEETING MINUTES

I-4 Wildlife Agency Coordination Meeting

The following persons met at the U.S. Fish and Wildlife Service office in Vero Beach, FL at 10:00 a.m. on January 23, 1995 to discuss the I-4 PD&E threatened and endangered species coordination.

U.S. Fish and Wildlife Service (USFWS)
Bob Pace
Jane Tutton

Florida Game and Fresh Water Fish Commission (FGFWFC)
Mary Ann Poole
Tim King

Florida Department of Transportation (FDOT)
Mark Schulz

Parsons Brinckerhoff Quade & Douglas, Inc. (PBQD)
Roger Menendez
Dave Reutter

Sverdrup, Inc.
Ray Moses

Michael Baker, Jr., Inc. (Baker)
Jeff Sawyer

The purpose of this meeting was to present to the USFWS and the FGFWFC a project overview, discuss the efforts to date on wildlife identification in the project corridor and solicit agency comments on survey methodology and potential impacts.

DISCUSSION:

The phasing of the I-4 project was presented by Mark Schulz and Jeff Sawyer (Master Plan, PD&E, design, right-of-way acquisition and construction). It was noted that the impacts to be discussed would be for no additional I-4 mainline right-of-way from Memorial Boulevard to SR 33 and 13.4 m (44 ft) of additional right-of-way from SR 33 to the Osceola County Line; not the 37.8 m (124 ft) of additional right-of-way called for in the I-4 Master Plan. All impacts to habitat are linear, generally 6.7 m (22 ft) on either side of existing right-of-way from SR 33 to Osceola County line (except for future storm water pond sites, mitigation sites and interchange right-of-way. It was pointed out that qualified biologists from the PD&E

and design project teams have been canvasing the I-4 corridor for over a year observing and evaluating wildlife and habitat. Roger Menendez and Dave Reutter described the Florida scrub jay clans discovered near the CR 54 overpass. The fall surveys have been completed following the approved methodology, the spring surveys will be conducted in March/April of 1995. The agencies commented that since the clan territories span I-4, road crossings should be noted during the spring surveys. Dave Reutter described that I-4 is in cut at that location and so the likelihood of jays being struck by vehicles is diminished. The USFWS was not aware that Florida scrub jays occupied a territory at that location (this location was not reported by the Archbold Station) and requested a map showing the boundaries of the clans. A copy of the I-4 Biological Assessment (with accompanying maps) will be given to USFWS and FGFWFC when completed (May or June of 1995).

The wildlife comments in the FGFWFC letter of October 27, 1994 (attached) were discussed:

Sherman's fox squirrel - It was noted that no suitable nesting habitat is within proposed right-of-way. PBQD noted there were no sightings during any of their field work. Mary Ann Poole suggested that surveys for nesting sites be conducted prior to construction (construction noise and other activity could scare the squirrels from the nest). A recommendation will be included in the PER and Environmental Document that impacted potential nesting habitats will be surveyed for nesting sites prior to construction. Any surveys will be coordinated with the USFWS and FGFWFC.

Florida sandhill crane - It was noted that no suitable nesting habitat (such as pickerel weed marsh) is within the proposed right-of-way. The agencies suggested that construction should avoid the nesting season. Aerial surveys for nesting sites should be conducted for a 1/4 mile radius of the project prior to construction and if nesting sites are located, they should be monitored by a qualified biologist to avoid scaring the cranes from the nest. A recommendation will be included in the PER and Environmental Document that potential nesting habitats within 1/4 mile of the project will be surveyed for nesting sites prior to construction. Any surveys will be coordinated with the USFWS and FGFWFC.

Southeastern American kestrel - It was noted that competent biologists have been observing the corridor for over a year (including the summer of 1994) and have not noted evidence of the Southeastern American kestrel. Linear impacts to nesting habitat areas are not considered significant due to the extensive habitat areas outside the I-4 impact zone. PBQD has reviewed the guidelines described in the FGFWFC Nongame Wildlife Technical Report No. 13, "Ecology and Habitat Protection Needs of the Southeastern American Kestrel (Falco sparvarius paulus) on Large-Scale Development Sites in Florida." The agencies suggested that known nesting sites/trees be protected and that surveys for nesting sites in the impacted area be conducted prior to construction. A recommendation will be included in the PER and Environmental Document that impacted potential nesting habitats will be surveyed for nesting sites prior to construction. Any surveys will be coordinated with the USFWS and FGFWFC.

Herpetofauna - Special protection provisions for Eastern indigo snakes (see attached example) will be included in the recommendations of the PER and Environmental Document. Warning posters should be posted at known habitat sites and at construction staging areas. Warning posters may be available from R.L. Weigt, Environmental Consultants, Inc., 10762 S.E. Federal Highway, Hobe Sound, FL 33455, (407) 546-6255. Education, awareness and specific location of known individuals should be documented and discussed

with the contractor prior to construction.

Southern bald eagle - It is felt that agency coordination for southern bald eagles is adequate. A recommendation for protection of eagle nesting territories will be included in the PER and Environmental Document.

GENERAL WILDLIFE DISCUSSION:

Jeff Toussant (Sverdrup) and John DeWinkler (FDOT) met with John Ryan (representing the I-4 Environmental Advisory Group) regarding wildlife crossing recommendations. Two crossing locations were noted: 1) at Gator Creek just west of the SR 33 interchange, and 2) between the CR 557 and US 27 interchanges (Green Swamp). One area was identified in the Green Swamp as a potential location (about 1.7 miles east of CR 557).

The use of low-level bridges (to span muck areas in Segment 6) as wildlife crossings was well received by the agencies. The existing cattle crossing (3.3 miles from CR 557) can provide credit for wildlife crossing.

Tim King inquired about the possibility of expanding the SR 33 bridge to include a greenway connection (wildlife crossing). Jeff Toussant (Sverdrup) will contact Tim King about the potential for a wildlife crossing east of SR 33.

Mary Ann Poole stressed that, in the absence of formal survey or protection guidelines, "use common sense".

Prepared by: Michael Baker, Jr., Inc.

Jeff Sawyer
Senior Planner

Date: 1/27/95

Attachments

xc: T.J. Martin, Michael Baker, Jr., Inc.
Jeff Tousant, Sverdrup, Inc.
John Dewinkler, FDOT
Attendees

Appendix H
Farmland Coordination Correspondence

Parsons Brinckerhoff
4200 West Cypress Street
Suite 700
Tampa, FL 33607
813-874-5300
Fax: 813-874-5307

November 22, 1994

Mr. Warren G. Henderson, State Soil Scientist
Soil Conservation Service
P.O. Box 141510
Gainsville, FL 32614-1510

Re: I-4 PD&E Study, Polk County
State Project Number: 16320-1402
Work Program Item Number: 1147948
Federal-Aid Project Number: ACDH-4-1(130)25

Dear Mr. Henderson:

Enclosed please find for your reveiw blueline aerials and Parts I and III of the Farmland Conversion Impact Rating for the Interstate 4 (I-4) project corridor, as required by the U.S. Department of Agriculture. The I-4 project corridor runs from the Hillsborough/Polk County line to the Polk/Osceola County line, a distance of approximately 51.5 km (32 mi). The existing cross section of I-4 was costructed within a right-of-way (ROW) nominally 60.962 m to 73.152 m (200 ft to 240 ft) in width west of the Hillsborough/Polk County line to west of Memorial Boulevard, a distance of about 4.44 km (2.76 mi). The remainder of the project from west of Memorial Boulevard to the Polk/ Osceola County line, a distance of about 47.06 km (29.24 mi), with the exception of interchanges and four (4) bifurcated areas in the locale of the Green Swamp, was built within the standard interstate ROW width of 91.440 m (300 ft).

As discussed during our telephone conversation of November 21, 1994, the total acreage of the existing corridor has been calculated to be 460.06 ha (1136.80 ac) and the estimated total acreage to be converted to transportation corridor by right-of-way (ROW) expansion has been determined to be 665.53 ha (1644.50 ac). For the estimation of ROW impact, the ultimate build out width of 424 ft was used for the entire length of the project corridor. This is an increase of 124 ft from the standard interstate ROW width of 91.44 m (300 ft ft) and a 62.18 m (204 ft) increase in the average ROW from west of the Hillsborough/Polk County line to west of Memorial Boulevard.

If you have any questions or comments, please contact me at (813) 874-5300.

Sincerely,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Jeffrey C. Weisner, Biologist

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P.O. Box 141510
Gainesville, FL
32614-1510

RECEIVED
JAN 19 1995

January 17, 1995

Mr. Jeffrey Weisner
Parsons Brinckerhoff
4200 West Cypress St.
Tampa, FL 33607

Dear Mr. Weisner:

RE: Farmland Protection Policy Act

Enclosed is Form AD-1006 with Part II, IV, and V completed for the proposed I-4, Polk County Project (16320-1402). Please note that a small amount of the proposed site is currently farmland as defined by the Farmland Protection Policy Act (FPPA). Completion of the project would destroy this farmland.

According to the FPPA, if the federal agency involved, (Federal Highway Administration in this case) decides to fund the project, the agency should complete parts VI and VII of the applicable form and return to me.

If you have questions or need further explanation, please contact me at the above address or by phone at 904-338-9533.

Sincerely,

Warren G. Henderson

Warren G. Henderson
State Soil Scientist

Enclosures

cc: Ed Sheehan, District Conservationist

Parsons Brinckerhoff
4200 West Cypress Street
Suite 700
Tampa, FL 33607
813-874-5300
Fax: 813-874-5307

February 10, 1995

Mr. Warren G. Henderson, State Soil Scientist
Soil Conservation Service
P.O. Box 141510
Gainesville, FL 32614-1510

Re: I-4 PD&E Study, Polk County
State Project Number: 16320-1402
Work Program Item Number: 1147948
Federal-Aid Project Number: ACDH-4-1(130)25

Dear Mr. Henderson:

As required by the Farmland Protection Policy Act, I am returning Form AD-1006 with Parts VI and VII completed. The Federal Highway Administration has already decided to fund the highway expansion project.

Alternative Site A was the only column completed since the center-line alignment will be utilized for this project. A shift in the alignment to the south or north would create more impacts than using the existing center-line alignment.

If you have any questions or require more information, please do not hesitate to contact me at (813) 874-5300.

Sincerely,

PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Jeffrey C. Weisner
Biologist

Enclosure

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date of Land Evaluation Request November 11, 1994
Name of Project 16320-1402, I-4, Polk County	Federal Agency Involved Federal Highway Administration
Proposed Land Use Transportation Corridor	County and State Polk County, Florida
PART II *(To be completed by SCS)*	Date Request Received By SCS 11-15-94 WDH

Does the site contain prime, unique, statewide or local important farmland (If no, the FPPA does not apply — do not complete additional parts of this form).	Yes ☒	No ☐	Acres Irrigated	Average Farm Size 289
Major Crop(s) Citrus	Farmable Land in Govt. Jurisdiction Acres 125,000 %		Amount of Farmland as Defined in FPPA Acres 125,000 %	
Name of Land Evaluation System Used Soil Potential	Name of Local Site Assessment System		Date Land Evaluation Returned by SCS 1-17-94 WDH	

	Alternative Site Rating			
PART III *(To be completed by Federal Agency)*	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	507.70			
B. Total Acres To Be Converted Indirectly	–			
C. Total Acres In Site	1644.50			
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	2.7			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	< 1 %			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	23 %			
PART V *(To be completed by SCS)* Land Evaluation Criterion				
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	84			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b)	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	15	15			
2. Perimeter In Non-urban Use	10	10			
3. Percent Of Site Being Farmed	20	20			
4. Protection Provided By State And Local Governments	20	20			
5. Distance From Urban Builtup Area	—	—			
6. Distance To Urban Support Services	—	—			
7. Size Of Present Farm Unit Compared To Average	10	5			
8. Creation Of Non-farmable Farmland	25	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	20			
11. Effects Of Conversion On Farm Support Services	25	2			
12. Compatibility With Existing Agricultural Use	10	1			
TOTAL SITE ASSESSMENT POINTS	160	98			
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	84			
Total Site Assessment (From Part VI above or a local site assessment)	160	98			
TOTAL POINTS *(Total of above 2 lines)*	260	182			

Site Selected :	Date of Selection :	Was A Local Site Assessment Used ? Yes ☐ No ☐

Reason for Selection :

Form AD-1006 (10-83)

recycled paper

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

TELEPHONE CONVERSATION MEMORANDUM

Project I-4 PD&E, Polk County Job No. 16 (Use Complete Number) Date June 1, 1993

From Jeff Weisner Talked to Warren Henderson, State Soil Scientist Soil Conservation Service

Indicate Department, Field Office, etc., for "In House" calls.
Indicate agency or firm for other than "In House" calls.

Item Discussed Mitigation required for conversion of Unique farmlands for the above mentioned project.

Information Obtained

Mr Henderson said that since very little of the Unique farmland of Polk County (<1%) will be converted to transportation uses, no mitigation will be required. Farmlands impacted by construction must be compensated for with the owner of the farmland property.

Action Required

Distribution: RM | J.S. | | | | |

By: Jeff Weisner

USDA

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

2614 N.W. 43rd St.
Gainesville, Florida
32606-6611

P.O. Box 141510
Gainesville, Florida
32614-1510

March 4, 1997

Mr. Jeff Weisner
Parsons Brinckerhoff
1408 North Westshore Blvd.
Suite 300
Tampa, Florida 33607

Re: 16320-1402 I-4 Polk County

Dear Mr. Weisner:

I have taken another look at the map of the referenced project and will rescind my original unique farmland determination. The 2.7 acres were inadvertently measured in an area which should not have been evaluated. Thanks for sending this Form back to me.

Please feel free to call me at 352-338-9535, if there are additional comments.

Sincerely,

Warren Henderson

Warren Henderson

cc: Ed Sheehan

RECEIVED
MAR 6 1997
PARSONS BRINCKERHOFF

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*

Date of Land Evaluation Request: November 11, 1994

Name of Project: 16320-1402, I-4, Polk County

Federal Agency Involved: Federal Highway Administration

Proposed Land Use: Transportation Corridor

County and State: Polk County, Florida

Date Request Received By SCS: 11-15-94 WDH

PART II *(To be completed by SCS)*

Does the site contain prime, unique, statewide or local important farmland (If no, the FPPA does not apply — do not complete additional parts of this form). WDH Yes ☐ No ☒

Acres Irrigated:

Average Farm Size: 289

Major Crop(s): Citrus

Farmable Land in Govt. Jurisdiction: Acres 125,000 %

Amount of Farmland as Defined in FPPA: Acres 125,000 %

Name of Land Evaluation System Used: Soil Potential

Name of Local Site Assessment System:

Date Land Evaluation Returned by SCS: 1-17-95 WDH 2-4-97 WDH

	Alternative Site Rating			
	Site A	Site B*	Site C*	Site D
PART III *(To be completed by Federal Agency)*				
A. Total Acres To Be Converted Directly	507.70	507.70	507.70	
B. Total Acres To Be Converted Indirectly	–	–	–	
C. Total Acres In Site	1644.50	1644.50	1644.50	
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	WDH ~~2.7~~ 0	0	0	
B. Total Acres Statewide And Local Important Farmland	~~0~~			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	~~.1~~ %			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	~~23~~ %			
PART V *(To be completed by SCS)* Land Evaluation Criterion				
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	84			

PART VI *(To be completed by Federal Agency)*	Maximum Points				
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b)					
1. Area In Non-urban Use	15	15			
2. Perimeter In Non-urban Use	10	10			
3. Percent Of Site Being Farmed	20	0			
4. Protection Provided By State And Local Governments	20	0			
5. Distance From Urban Builtup Area	—	—			
6. Distance To Urban Support Services	—	—			
7. Size Of Present Farm Unit Compared To Average	10	2			
8. Creation Of Non-farmable Farmland	25	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	0			
11. Effects Of Conversion On Farm Support Services	25	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	27			
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	84			
Total Site Assessment (From Part VI above or a local site assessment)	160	29			
TOTAL POINTS *(Total of above 2 lines)*	260	108			

Site Selected:

Date of Selection:

Was A Local Site Assessment Used? Yes ☐ No ☐

Reason for Selection:

Sites B and C did not contain any prime or unique farmland. 2-10-97 WDH

Form AD-1006 (10-83)